

# MARTINDALE BRIGHTWOOD

INDIANAPOLIS INDIANA

## COMMUNITY REVITALIZATION THROUGH AN URBAN TRANSIT ORIENTED INFILL DEVELOPMENT

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## Abstract

This project is a Mixed-Used Urban and Village and an Urban Transit Oriented Development in Martindale-Brightwood neighborhood located on the northeast side of Indianapolis Indiana. This project has been made possible by the convergence of several social, economic, and natural conditions that beg for a revitalization catalyst project as was introduced to the designer during the fall of 2009 Smart Growth Indy SDAT Charrette. During this community based Charrette a crucial survey was administered that polled the residents of Martindale-Brightwood. Through these surveys it was found that the area severely lacked walkability and safety, lacked multimodal transportation, and had an extremely high rate of vacant and abandoned lots. There was also a strong interest in commuter rail service, a high potential usership of a rail service, and a common feeling that the rail service would have a positive impact on the community.

Coupled with the community's interest in a rail service, the city of Indianapolis has recently proposed a new mass transit system that will include, light rail, commuter rail, and new bus systems for the entire city of Indianapolis. Currently Indianapolis is the 14th largest city in the nation, however is ranks 100th in public transportation. The new transit plan seeks to connect Indianapolis regionally to the north in Fishers Indiana, and south to Greenwood Indiana with a commuter line. As the plan stands currently this commuter line that provides regional and local connection would run on an old abandoned rail line adjacent to the Monon Greenway, directly through the project site in the Martindale-Brightwood Neighborhood.

This project is an example of a Mixed-Use urban Village, Urban Transit Hub, and Infill opportunities within the surrounding urban fabric. This project will serve the people of Martindale-Brightwood by localizing services and amenities, providing multi-modal transit opportunities, providing common open space and park space, and promote wellness through walkable streetscapes and better accessibility and enhancements to the Monon Greenway.



## Acknowledgements

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# Table of Contents

<b>Abstract</b>	i
<b>Acknowledgements</b>	ii
<b>Introduction</b>	8
<b>Review of Literature</b>	10
Case Studies	18
<b>Problem</b>	20
Hypothesis	21
Definitions	22
Delimitations	23
Assumptions	23
<b>Project Significance</b>	24
Goals	25
<b>Site Description</b>	26
<b>Program</b>	28
<b>Design Process</b>	32
<b>Methodologies</b>	34
<b>Location and Vicinity Map</b>	36
<b>History</b>	38

# Table of Contents

<b>Inventory</b>	46
<b>Analysis</b>	52
<b>Site Photographs</b>	60
<b>Precedents</b>	64
<b>Conceptual Development</b>	66
<b>Master Plan</b>	72
<b>Density and Green Space</b>	74
<b>Systems Diagram</b>	76
Circulation	82
Transit Hub	90
Block Typologies	94
Construction Details	112
<b>Conclusion</b>	116
<b>Works Cited</b>	120

## **List of Figures**

<b>Figure 1: Abandoned Railroad</b>	9
<b>Figure 2: Junk Yard</b>	9
<b>Figure 3: Abandoned Rail Corridor</b>	20
<b>Figure 4: Abandoned Rail Yard</b>	33
<b>Figure 5: Vicinity Map</b>	37
<b>Figure 6: Community Charrette Presentation</b>	39
<b>Figure 7: Site Aerial 1941</b>	40
<b>Figure 8: Site Aerial 1956</b>	41
<b>Figure 9: Site Aerial 1992</b>	42
<b>Figure 10: Site Aerial 2010</b>	43
<b>Figure 11: Charrette Surveys</b>	44
<b>Figure 12: Proposed Transit Plan</b>	45
<b>Figure 13: Land Use Inventory</b>	47
<b>Figure 14: Figure Ground Inventory</b>	49
<b>Figure 15: Land Use Analysis</b>	51
<b>Figure 16: Figure Ground Analysis</b>	53
<b>Figure 17: Amenity Analysis</b>	55
<b>Figure 18: Green Space Analysis</b>	56
<b>Figure 19: Site Scale Analysis</b>	59
<b>Figure 20: 30th Street Birds Eye</b>	60
<b>Figure 21: 25th Street Birds Eye</b>	61
<b>Figure 22: Residential Block Birds Eye</b>	61
<b>Figure 23: Site Photos</b>	62
<b>Figure 24: Site Photos</b>	63
<b>Figure 25: Concept 1</b>	67
<b>Figure 26: Concept 2</b>	69
<b>Figure 27: Concept 3</b>	71
<b>Figure 28: Master Plan</b>	72
<b>Figure 29: Diagrammatic Plan</b>	73
<b>Figure 30: Proposed and Existing Conditions</b>	74

## List of Figures

<b>Figure 31: Proposed and Existing Density</b>	74
<b>Figure 32: Exploded Diagrams</b>	76
<b>Figure 33: Aerial Perspective 1</b>	78
<b>Figure 34: Aerial Perspective 2</b>	80
<b>Figure 35: Circulation Diagram</b>	82
<b>Figure 36: Aerial Streets</b>	84
<b>Figure 37: Interior Streets</b>	85
<b>Figure 38: Residential Streets</b>	86
<b>Figure 39: Promenade and Commuter Rail</b>	87
<b>Figure 40: Unique Alley Ways</b>	88
<b>Figure 41: Fall Creek Overlook</b>	89
<b>Figure 42: Transit Hub Plan</b>	90
<b>Figure 43: Exploded Transit Hub Axon</b>	91
<b>Figure 44: Great Lawn</b>	93
<b>Figure 45: Single Family and Duplex Block Plan</b>	96
<b>Figure 46: Single Family and Duplex Block Axon</b>	97
<b>Figure 47: Community Gardens</b>	98
<b>Figure 48: Town Home Block Plan</b>	100
<b>Figure 49: Town Home Block Axon</b>	101
<b>Figure 50: Apartment Block Plan</b>	102
<b>Figure 51: Apartment Block Axon</b>	103
<b>Figure 52: Bioswale and Wildlife Corridor</b>	104
<b>Figure 53: Mixed Use Block Plan</b>	106
<b>Figure 54: Mixed Use Block Axon</b>	107
<b>Figure 55: Mixed Use Block Urban Park</b>	108
<b>Figure 56: Rain Garden Detail</b>	111
<b>Figure 57: Retractable Bollard Detail</b>	112
<b>Figure 58: Green Roof Tray System Detail</b>	113
<b>Figure 59: Grass Crete Paving Detail</b>	114
<b>Figure 60: Permeable Paver Edge Detail</b>	115

## Introduction

Today the Martindale-Brightwood neighborhood is a unwelcoming urban environment. The community's blocks are riddled with abandoned houses and properties. The sidewalks and streets are cracked and broken and make pedestrian activity nearly impossible. The abandoned industrial corridor, abandoned rail line and Monon trail have created a void in the urban fabric. This area has been left to feel disconnected from the great Indianapolis area. The Martindale-Brightwood neighborhoods are populated by a high number of low-income, minority, and immigrant families are especially short of park space. Low-income and minority families have historically been walled off to live on the "wrong side of the tracks", in the paved over, ugly, industrialized areas with few public amenities, from an equality standpoint, there are strong need to address this imbalance.

The current state of Martindale-Brightwood clearly makes it the most under utilized and neglected urban area within a three-mile radius of Indianapolis. However there is a glimmer of hope for the Martindale-Brightwood, Indianapolis is currently proposing a mass transit system, in which a commuter rail would pass through the abandoned industrial corridor that has acted as a barrier in the community for the last 30 years. The addition of the commuter rail opens up a wealth of new opportunities and will act as a true revitalizing catalyst that will regenerate the dismal Martindale-Brightwood. The site of this project located between the 30 street and 25th Street to College Avenue and Andrew J. Brown Avenue have created an ideal location for an urban Transit Oriented Development (TOD) which will include a transit hub, mixed use neighborhood center, well designed park and public open space, and an opportunity to increase the density of the city blocks by proposing diverse types of residential urban infill.

This project is an attempt to establish a paradigm that combines the utopian ideal of an integrated and heterogeneous community with the realities of ecology, affordable, equity, and technology, while including smart planning for the future. It is the charge of a Landscape Architecture to design these public human environments with consideration of form and function to fit the needs of these new developments residents, workers and daily visitors.



Figure 1: **Introduction Photo**



Figure 2: **Junk Yard**

## **Review of Related Literature**

In the post war year of the 1960's and 1970's there has been an exodus of people moving to suburban neighborhoods on the out skirts cities. These influxes of people have encouraged urban sprawl and destroyed valuable natural and social resources. However maybe one of the least thought of affect of this suburban movement is the impact of the urban areas from which these people fled. Areas like Martindale-Brightwood, have become nearly ghost neighborhoods: mere skeletons of their once thriving vibrant selves. This absence of people has directly related to a failing local economy, lack of services and amenities, relating to a lower quality of life than other residents of Indianapolis enjoy.

This review of related literature will explore and critique those written works which discuss the impact of Transit oriented Development, Residential Infill, and open park space can act as a catalyst for neighborhood redevelopment, create linkages between neighborhoods, and respect ecology. The research will also review precedent studies of successful urban parks

### **Urban Transit Oriented Development as a revitalization catalyst.**

#### **Over View**

Successful American Transit Oriented Developments are very unique places. They are balanced and constant, while being dynamic, vibrant, and ever changing. These successful communities are having common values and principles. They are built on the principals of reasonable organization to support smart growth and expansion while being compact and dense. They allow commercial, retail, jobs, housing and civic uses to be accessible through walking. They create pedestrian friendly streets and neighborhoods that promote connections to local amenities and instill a sense of safety in their users. Housing is diverse in types of houses, densities, and affordability (Calthorpe 82). Natural features, habitat, and public open space are preserved to promote environmental wellness. Buildings are focused and oriented to public spaces and neighborhood activities. Infill is encouraged along transit corridors, and within existing neighborhoods. These principles come from the timeless goals of urbanism, and have been created the best man-made environments in the world.



## **Review of Related Literature**

Farr describes Transit Oriented Developments as smart growth developments that emphasize alternative forms of transportation other than the automobile. These forms of transportation include but are not limited to walking, cycling, and mass transit (Farr 300). A TOD is designed to meet these multi-modal circulations challenges. According to Calthorpe, most developments include, a transit stop centrally located, followed by layers of commercial/retail/office mixed-use development (Calthorpe 78). TOD commonly has extensive open space and park space systems that service the high densities of the surrounding residential areas. These residential areas include a diverse variety of residential building types such as apartments, town homes, duplexes, and single family homes (Calthorpe 82).

According to Farr there are four steps to insure that an area is transit ready. First, the development must be located on a transit corridor. Second, a transit warrant program with the regional transit agency. Third, the development needs to satisfy a transit agency's transit warrant which likely requires a minimum of 7 dwelling units per acre, with the opportunity of expansion to 15 per acre. Lastly, the development needs to be clustered in alignment of the transit stop (Farr 46).

### **Economic Benefits**

The implementation of a Transit Orient Development has many positive economic benefits. According to Calthorpe, economic benefits are an important part of the positive feedbacks of a Transit Orient development (Calthorpe 46). As transit ridership improves, funds for the service can be justified to further improve the condition of transit service making it convenient for the users. Air quality improves from reduced emissions, and as a result, health care cost will reduce. As more people walk, use a bicycle and use the transit system, local and state budgets for road improvements and maintenance will be reduced. Parking needs will be reduced as a result of increased walkability. In a Portland Oregon Mixed-use Neighborhood/TOD study confirmed that a increase and walkability and a dramatic reduction in total vehicle miles travels resulted in \$8,883 savings for the residents (Calthorpe 48).

## **Review of Related Literature**

### **Regional and Local Connections**

Douglass Farr states transit corridors are the backbone of sustainable urbanism, linking neighborhoods together with districts and other regional destinations. New developments need to meet and enhance the current connections such as subway, bus, and trolleys. It is also necessary to locate appropriate land uses within the development to make an automobile-independent lifestyle practical (Farr 46).

### **Infill, as catalysts for neighborhood redevelopment**

Infill Sites are a collection of lands that have been overlooked but are surrounded by an existing development. When in the existing street grid, such as Martindale Brightwood, it is important to also address enriching and creating better walkable connections. Infill sites are often a big enough to develop some if not all of a major portion of a TOD (Calthorpe 69). The ability to increase density of a development and not expanding the footprint of the development make infill a responsible addition for a Transit Oriented Development. According to Frank Spink, there has been a new interest in Infill sites because there is a lack of available land and the typical suburban paradigm is in a transition to being more urban and compact. As a result these lands can be acquired at a low price, and sold for a much higher profit. Existing low-intensity and auto-oriented uses should be redeveloped to be consistent with the TOD's compact pedestrian character (Calthorpe 68).

According to the Urban Land Institute, Infill development is becoming increasingly popular as a response to some of the current and future concerns of our cities. It can be a means of protecting and enhancing as well as revitalizing our older neighborhoods such as Martindale Brightwood (ULI 5). In a study of potential infill lots in Miami Florida were often clustered in low-income neighborhoods. The locations of these infill lots are limited by their marketability. The infill sites in the Martindale Brightwood area are also limited by marketability, but a Transit Oriented Development will dramatically increase the marketability and feasibility of both commercial and residential infill.

## **Review of Related Literature**

### **Urban Parks as catalysts for neighborhood redevelopment.**

#### **Economic Benefits**

David Jost reviews the Buffalo Bayou Promenade in Houston Texas; development projects in Harris County such as the Buffalo Bayou have been a boon to real estate values along the bayou. While there isn't much land available for development around Buffalo Bayou Promenade itself, "we have people buying near the bayou on the north end of downtown on the dream we're going to (extend the promenade) someday" states Eury (85). A linear urban Park can be a revitalizing catalyst can benefit the economy and social quality of the community(Jost).

Harnick examines a series of parks that have been built on or around existing freeways and high volume interstates. One example is downtown San Diego, whose developers wanted to connect the famous Balboa Park with a series of decks over I-5. The decks also served the high volumes of residents within the downtown district that would not have any access to green space otherwise. Despite the large initial cost, funding came from many local, state, and federal funds. Analysis has showed that the development will generate significantly more tax revenue. (Harnik 35). The real key to a successful highway deck is the economic spin off generated. (Harnik 34).

In "The Benefits of Parks", Paul Sherer examines the economic benefits of parks. Sherer outlines six economic benefits including increased property values in low-income urban areas, increased property values at the edge of urban areas, effects on commercial property values, the ability to attract and retain business and residents, and in some unique cases tourism benefits. "The real estate market consistently demonstrates that many people are willing to pay a larger amount for a property located close to parks and open space areas than for a home that does not offer the amenity" (Sherer 16) writes John Crompton, a professor at Texas A&M University. In low-income urban areas a USC study found a positive relationship between proximity to parks and property value. (Sherer 15-18).

#### **Social Benefits**

Sherer examines the social benefits of parks. Sherer outlines these benefits as reducing crime, creating recreation activities, and creating stable neighborhoods with strong communities. Parks reduce crime by

## Review of Related Literature

providing a safe place to play and occupy a juvenile's time, time that could be spent getting into trouble. The police department of Fort Myers Florida have documented a twenty-eight percent drop in juvenile arrests after the city began STARS (Success Through Academics and Recreation Support) Fort Myers, built many new recreation facilities. To further support recreation many communities have started midnight basketball programs to keep courts open late at night when crime is more likely to happen. This program was used in Forth Worth Texas and crime rates were documented to drop 25 percent within a 1-mile radius of the courts. Green space also builds stronger communities. In a study by the University of Illinois, it was found that inner cities common spaces were typically barren and concrete. Vegetation such as turf grass soften the landscape and create a softer common space for informal social contact between neighbors (Sherer).

In the Health Benefits of Parks, Erica Gies outlines how parks keep American and their communities fit and health. Studies show that when community members work together in common activities such as gardening and cleaning vacant lots to create open spaces, people begin to look out for each other and create solid, trusting relationships. They also hold each other accountable to preserve the quality of their parks. This idea of working together toward a common goal is known as "social capital". As people work together they begin to develop a level of trust and a sense of ownership towards the park space. The increase in social appreciation has been found to reduce violent crimes, property crimes, and better responses to government actions because they come together on a unified front (Gies 17-18).

In, The Health and Social benefits of Recreation, the state of California outlines the social benefits of recreation and park space. This article argue that park space encourage volunteerism, promotes stewardship, unites families, builds cultural diversity and harmony, supports individuals with disabilities, and supports senior activity (Element 5).

## **Review of Related Literature**

### **The role of urban parks connecting adjacent neighborhoods i)Connections**

A linear urban park by the nature of its long its shape creates a platform to connect groups of communities together. In *Parks for People* Ben Whitaker explores peoples need for parks. Diversity in users creates the largest design problem when designing a Linear Urban Park. To create a well designed park it is imperative not to forget any user's needs. There is also a need to create smooth transitions through the park as needed by the community. The main reason people don't use urban open space is because they feel excluded and forgotten. This calls for the design to designate common space, such as turf, open plaza areas, and other open spaces that will provide enough space for people to gather, organize, or play. The test of a successfully planned park is one where any type of person feels at home without resenting anybody else impinging on his or her actions (Witaker).

In the article "New West Side Story", *Landscape Architecture Magazine* (August 2007), Alex Ulam examines the linear urban waterfront parks along the Hudson River in New York City. These parks combined connect five miles of parks. Bike lanes and pedestrian walkways connect five adjacent neighborhoods together. Not only do these parks join neighborhoods together but also they connect neighborhoods to natural features like the waters edge of the Hudson River (Ulam 96-97).

In the book *Open Place People Place* Catherine Thompson examines the reasons people use parks. While adults may use a park as a place as a meeting place, teenagers may use it as a way to get away from adults, to be free to do what they want without any restrictions by their parents. People can use one park in many very different ways. Large greens paces are attractive to a variety of people regardless of age. When creating solid connections between neighborhoods there is no standardized method. Each case is unique and cultural, historical, and environmental issues need to be individually examined (Thompson 25-35).

## **Review of Related Literature**

### **Ecological considerations of urban parks**

#### **Plant Material**

In *Landscaping with Natural Plants*, Elizabeth DuPont examines the need for using native plants in the environment. Using native species of plant material with the land and bring out its own beauty. Native plants in a park are not only attractive they also serve as a supplement of natural habitat to native insects, birds, and animal communities. The planting design does not have to follow any set code like naturalistic plantings or formal plantings. The simple fact that native plants are used in the design provides adequate habitat for wildlife(Dupont).

Contrastingly, Michael Van Valkenburgh and Associates chooses to use unconventional plant palettes in most of their designs. They prefer to mix and match rather than to go with strictly native species of plants. This is primarily because they are involved with such a large variety of projects at different types and scales. It is important to try to implement native plantings whenever possible. It is acceptable to use a non-native plant only if the shape, growth habit, or characteristics are found only in exotic species and a native counterpart cannot match their properties (MVVA 26).

On the website created by New York City Department of Parks and Recreations, Greenbelt Native Plant Center reports on their past Ecotype Study conducted from 2004 to 2007. The report states that urban spaces apply a very high-level of stress on many native plant species. These native plant species are always in competition of invasive plants especially on disturbed land. When native plantings are established these small units can help sustain wildlife, water, and improve air quality. The study's main goal was to identify which native plants could thrive and compete in harsh conditions against invasive species. They have found that many native plants that can compete, rehabilitate degraded natural areas, and have a positive effect on the environment for New York City.(Center).

## Review of Related Literature

### Environmental Benefits

In *Olmsted in Chicago*, Victoria Post Ranney examines Fredrick Law Olmsted's ecological design theories. Olmsted's designs took advantage of natural systems. Systems of waterways were used throughout his parks. Creeks, streams, lakes, and reservoirs as places of recreation, fishing, and relaxing exemplify these systems. He understood that waterways allow drainage issues to be solved in aesthetically pleasing ways. Swampy areas drained reduced the amount of mosquito larvae hatched and reduced cases of insect born diseases. Today draining wetland areas are not accepted because it destroys small ecosystems, but the art of combining the needs of natural systems and human needs for a functional and beautiful landscape is an incredible ecological goal that should be used in every aspect of landscape architecture and design. Olmsted also designed dense woodland plantings to create areas of deep shade that will create cool micro-climates for people during the summer. These unique deep shade areas also provide unique ecosystems for a variety of shade loving plants and insects (Ranney 11-28).

In *The Benefits of Parks*, Paul Sherer examines the environmental benefits of parks. Sherer outlines these environmental benefits as Pollution abatement, cooling, and controlling stormwater runoff. "A study conducted by the U.S National Forest Service calculated that a 50 year old tree generates \$31,250 worth of oxygen, provides \$62,000 worth of air pollution control, recycles \$37,500 worth of water and controls \$31,250 worth of erosion control." Trees, vegetation, and soil also act as natural air conditioner that keeps cities cooler by shade, and evapo-transpiration. Parks also can control and improve stormwater in several different ways. Open permeable surfaces manage stormwater better than impervious surfaces, which channelize water into sewers, and drainages systems. Trees and soil act as natural filters, holding contaminants, absorbing nutrients, and filtering water before it reaches storm water facilities (Sherer 19-20).

## **Case Studies**

### **The High Line New York, New York**

The High Line is located on the west side of Manhattan Island spanning north and south from 20th Street to 34th Street. This park was built on an old, abandoned elevated super structure rail line that was used to service the importing and exporting of meat packaging facilities and other businesses. When completed, the park will stretch one in a half miles throughout dense urban neighborhoods. The park is composed of concrete pathways, natural plantings, both fixed and movable seating, lighting, and other special features. The park was part of a competition, which was won by James Corner Field Operations. The first phase of the park was opened to the public in June of 2009 (Ulam 91-109). The High Line is an example of a park that will revitalize the west side of the Manhattan, and enrich the surrounding neighborhoods. Aside from the obvious aesthetic benefits of the park, the surrounding areas will benefit by more people coming and enjoying the park. This will supplement local businesses, rise property values, and create a place for people to relax, enjoy and call their own.

### **Landbridge Vancouver Washington**

The Landbridge in Vancouver Washington is a unique park because it serves three purposes. The first is to connect an army base with the upland historic district of Vancouver, with an overpass trail and bridge system over a dangerous Interstate 5. Secondly the overpass acts as a large cultural art trail that celebrates the bicentennial anniversary of the Lewis and Clark Expedition. Lastly, the Landbridge acts as a refuge for a native prairie plant community, which stretches across the highway via the Landbridge. There are more than one hundred different native plants that have been replanted from the detailed plant descriptions written by the Lewis and Clark Expedition. The Landbridge was a large engineering challenge and includes 15 major retaining walls, engineered soil, and cantilever walls. This is a great example of how a linear urban park can bridge a seemingly impenetrable barrier and transforms it into a great amenity for the Vancouver community (Enlow 91-95).



## Case Studies

### Red Ribbon-Tanghe River Park Hebei Province, China

Paua examines the design of Red Ribbon-Tanghe River Park located in Hebei Province, China. This particular area of China is particularly prone to devastating floods. These 50-100 year floods have prompted most cities to realign the natural rivers flow, compartmentalizing the water into huge concrete channels that provide no area for natural systems or areas for people to enjoy the water. This park was built to preserve undeveloped areas of the riverbank and restore abandoned areas that had become neglected after an explosion of urban expansion. The designers of the park decided to engineer the park to flood rather than channel access water that gets pushed down the river for another community to deal with. The red ribbon, a 1000-foot long seating wall, was located slightly above the 100-year flood level. The designers also installed massive amounts of rock and steel cages to stabilize the eroded banks of the river. Poplar groves, grasses, and other riparian vegetation were saved and replanted along the river and through the site. This linear riparian corridor is in stark contrast to the park on the other side to the river, which is shielded by a fifty-foot bank of solid concrete. (Pauda). The Red Ribbon Park is a perfect example of how to deal with a problem such as flooding with softer, more natural approach then concrete barriers. This naturalized riparian corridor is an example of how ecology and art can create a beautiful and functional park that provides gardens, long boardwalk, and many other gathering areas in a Chinese culture that prefers function to form. This project is a great example of how a park can serve an ecological function such as flood control gracefully, reestablish native vegetation, create several pockets for recreation, and connect large groups of people via a long winding boardwalk.

## Problem

This comprehensive thesis project will explore the transformation of an abandoned industrial corridor and the surrounding vacant blocks into a vibrant urban Transit Oriented Development that connects Martindale-Brightwood regionally and locally by the way of a light commuter rail line. This development will create a dense, compact, and walkable urban environment.



Figure 3: **Abandoned Rail Corridor**

## Sub Problems

- A** Determine how a TOD can serve as a revitalizing catalyst, improving the neighborhood socially, environmentally, and economically.
- B** Identify the role of a TOD in creating linkages between adjacent neighborhoods.
- C** Determine role of Residential Infill in a revitalization project
- D** Determine the affect of parks, and open space in the urban environment.

## Hypothesis

The existing Monon Trail and abandoned industrial corridor around the trail divides the neighborhood of Martindale-Brightwood in Indianapolis, Indiana by ripping a long chasm through the surrounding area. A newly proposed light commuter rail line along the Monon Trail, within the abandoned industrial corridor, will provide a foundation for Transit Oreinted Development that will contribute to the healing the condition of the abandoned industrial corridor revitalize the Martindale-Brightwood neighborhood.

## Definition of Terms

**Transit Oriented Development (TOD):** Transit Oriented Development is a development designed around a central transit node. The development is pedestrian oriented, compact, and dense.

**Brownfield:** A property, that's reuse is complicated because it is polluted or perceived, polluted due to its former use,

**Greenway:** A long, narrow, piece of land, which is primarily used by cyclists, pedestrians, and other forms of recreation.

**Linkage:** A connection between multiple communities through intersections, green space, or park spaces.

**Abandoned Industrial Corridor:** A combination of properties that have been abandoned. They are commonly Brownfield sites and consist of land, and dilapidated buildings.

**Ecological Considerations:** A set of environmental concerns dealing with wildlife, respect of ecosystems, native plantings, urban heat island, and stormwater management.

**Neighborhood:** A community within a larger city in which people have strong social bonds.

**Revitalization Catalyst:** is any development that enhances the quality in a neighborhood's environment and improves the economic state of a neighborhood, as well as, the wellness and well being of the citizens of the neighborhood.

**Partnerships** - A type of business entity in which partners share profits and losses together. They often come together to invest on a project that may be too large for a single investor. Partnerships are important when developing large community projects such as a linear urban park.

## Delimitations

**A**

This study will be limited to sites located nearest to Monon Trail and Commuter Rail Corridors.

**B**

This study will be limited to abandoned industrial corridors.

**C**

This study will be limited to urban park design and will not include the aspects of Brownfield remediation techniques for the abandoned industrial sites.

## Assumptions

**A**

The citizens of Indianapolis will greatly benefit from a Transit Oriented Development on the northeast side of Indianapolis, Indiana.

**B**

The Transit Oriented Development, Residential and Commercial Infill, and parks will be a catalyst for more investment within the abandoned industrial corridor and the surrounding communities to reenergize the Martindale-Brightwood Neighborhood.

**C**

The over all development will address ecological considerations such as wildlife corridors, urban heat island effect, and stormwater management to serve the surrounding communities.

## **Project Significance**

The people of Martindale-Brightwood have been “cut off” from the surrounding neighborhoods by three large features in the landscape. First a large greenway that spans north and south has sliced through many different small alleyways; one large chain link also flanks the east side of the greenway. Opposite of the chain link fence the second obstacle in the landscape, an abandoned rail line runs parallel to the greenway. The rail line, large creosote soaked wooden ties, and the coarse aggregate pose an uninviting space for the people of the neighborhood. The third obstacle in the landscape is a large industrial corridor that was served by the once active rail line. These buildings have been abandoned for many years and are deteriorating very quickly. Many buildings have caved in and have vegetation that has completely taken over the property. These combinations of obstacles have created a giant dead space in the neighborhood.

As a result of the poor condition of the landscape; the Martindale-Brightwood neighborhood has been suffering from low-income levels, low property values, and low occupancy rates within the neighborhoods blocks. Additionally, this community suffers from high crime rates, drug problems, prostitution, and illegal garbage dumping. There is a dire need to reconnect Martindale-Brightwood to the surrounding Indianapolis neighborhoods before the area gets too economically and socially far behind to the point where they will not be able to make a competitive comeback without completely starting from scratch. Luckily with the proposal of a light commuter rail line , an urban TOD would assist in allowing Martindale-Brightwood to reach its full potential. An urban TOD would assist in healing the condition of this neighborhood by transforming not transferring the problem into a solution.

## **Project Clients**

By visiting a community meeting on October 29th I was able to hear first hand from the people of the Martindale-Brightwood area. The participants and their families have suffered terribly by the increase of crime, drugs, and prostitution. These abandoned structures of the area act a breeding ground to harbor such activity. The clients of this project would be the people of Martindale-Brightwood and surroundings neighborhoods. Seasonally this park could serve as a pedestrian and cycling promenade to the State Fair. The park will serve as a place to celebrate and heal Fall Creek. The overarching goal is create a safe linear urban park that serves as a revitalizing catalyst to a deserving community who has been neglected for many years.

## Goals

- 1** Employ compact Transit Oriented Development principles.
- 2** Create a vibrant commercial and residential context for the light rail/commuter line and the transit hub.
- 3** Utilize low impact development and green infrastructure techniques.
- 4** Provide common, public, private, and natural open space for the people of Martindale-Brightwood.
- 5** Maximize pedestrian and bicycle transportation opportunities on site and in connections to diverse surrounding context and public transportation opportunities.
- 6** Develop strong physical and social connectivity to the exiting context recognizing existing patterns of development and socio-economic groups.

## Site Description

The site for a proposed Transit Oriented Development is located in the heart of Indianapolis's east side in the Martindale-Brightwood neighborhood. Located along a large greenway, the Monon Trail, that spans north and south has sliced through many different small alleyways; one large chain link also flanks the east side of the trail. On the other side of the chain link fence the second obstacle in the landscape, an abandoned rail line runs parallel to the trail. The rail line, large creosote soaked wooden ties, and the coarse aggregate pose an uninviting space for the people of the neighborhood. The third obstacle in the landscape is a large industrial corridor that was served by the once active rail line. The built structures have been abandoned for many years and are deteriorating very quickly. Many buildings have caved in and have invasive and weedy plants have invaded these spaces that has completely taken over the property. This sequence of obstacles has created a giant void in the neighborhood.

The biophysical context of the site is very poor it has no prominent overstory canopy trees that provide any shade. It is mostly comprised of Honeysuckle (*Lonicera maackii*), Buckthorn (*Rhamnus cathartica*), Tree of Heaven (*Ailanthus altissima*), and Silver Maple (*Acer saccharinum*). Along the Monon trail there have been attempts to establish an alley of Thornless Honeylocust (*Gleditsia triacanthos* var. *inermis*) but they are in poor condition. The land on the site is fairly flat and slopes gradually to the northeast. In sheet flow conditions the site would be saturated by water of the neighborhood trying to reach Fall Creek. This has posed problems of flooding in the past, but this condition will serve as a great opportunity to deal with the potential large amount of stormwater through retention, detention, and infiltration areas.





Figure 3.1: **Abandoned Rail Yard**

## **Program**

### **Transit Oriented Development (TOD)**

Transit oriented Development is a development designed around a central transit node. The development is pedestrian oriented, compact, and dense.

### **Transit Hub**

The Transit Hub is the central node of the TOD. It is the initial revitalizing catalyst to the project. People will flow in and out of this Transit Hub. A commuter train will be the primary train used in this hub, and it will allow the Martindale-Brightwood community to be connected both regionally and locally.

### **Mixed Use Village**

The Mixed Use Urban village primary use is to meet the needs of the people of Martindale-Brightwood. Currently the local amenities and services such as grocery store, laundry service, and doctor's offices are dispersed randomly within a 1.5-mile radius from the project site. The proximity of these local services and amenities reduce the walkability of the area. The new Mixed Use Village will condense these services into a compact dense area that will improve the walkability of the area. The mixed-use buildings will vary from three to four stories. Retail and commercial uses will be located in the first floor, office or residential apartment uses on the second floor, and residential studio/single bedroom apartment uses in the upper third to fourth stories.

### **Vocational Tech School**

Education opportunities are critical to the sustainability of the community revitalization. Due to the expansive industrial corridor that stretches north and south of the site it is important to provide the opportunities to learn the trades, business, and entrepreneurial skills for people of all ages.

### **Multi Modal Circulation**

Multi modal circulation will primarily deal with the circulation of pedestrians, bicycle, and auto traffic. This has been achieved by well-designed streetscapes including concepts of narrow streets, bike lanes, and wide sidewalks. Another circulation concept is a loop system that allows residents to complete their errands and daily activities in a loop. The looping concept is enhanced by one primary pedestrian/bicycle loop that connects the major open spaces, natural features, and land uses in a nearly one-mile loop. The "Community Loop" has common materials, vegetation, and other streetscape elements.

# Program

## Open Space Park Design

Park Design is one of the unified features in this project. There are also many different scales and types of park within this project ranging from a large open park in the center of the development that acts as a public gathering space, recreational parks, and smaller pocket parks within the residential blocks that offer opportunities for victory gardens and food production. These parks reduce urban heat island effects, provide microclimates, reduce impermeable surfaces, and soften the urban environment making it more livable.

## Streetscape

Streetscape can be defined as a group of elements that will unify the developments circulation. The Streetscape will encourage vibrant street life, sense of scale, and sense of place. Streets will have street trees, wide sidewalks, benches, planters and containers, similar materials including brick, unit-pavers, and concrete, similar signage and way finding elements.

## Residential Infill

With the current vacancy rates of the blocks of Martindale-Brightwood within a mile of the transit hub and tract 3517 reaching in excess of 30% vacancy rate on the blocks. Residential infill is necessary to increase density and feed the transit stop. This projects presence will encourage developers to build housing of multiple densities because people will desire to live near a transit hub. The residential infill type will be the most dense nearest to the transit hub then fade smoothly to less dense residential options. This housing will be occupied by self selection, people will want to live near a transit hub, in a community designed to be compact and dense, and in a community with ample open space, park space, and natural features such as Fall Creek.

### • Apartment Infill Blocks

The apartment infill will be located closest to the transit hub. These areas will have a variety of different building types, which will include 3 story corridor type buildings. Recreational facilities, open space, parking, and local services and amenities will be located in the supporting context.

## Adaptive Reuse Live Work units

The live work units are located to the far north of the development adjacent to the Monon Trail. These units are located within the only building on the site that had any significant architectural nostalgia. These units will utilize the lower floor for retail/

## Program

studio applications and the upper levels for the living area. The primary users of Live/Work units are artist, specialty trades, and entrepreneurial opportunities. These units will also be used as a business incubator. Recreational facilities, open space, parking, and local services and amenities will be located in the supporting context.

### **Town House Infill**

The Town Home infill will be located within a 5-10 minute walk of the transit hub. These areas will have a variety of different building types and will be nearly three times as dense as the initial block layout. The Townhouse buildings will vary from two to three stories with tuck-under parking in the alley. Recreational facilities, open space, parking, and local services and amenities will be located in the supporting context.

### **• Duplex /Single Family Infill**

The Duplex/Single family Infill (DSI) will be the least dense form of infill and located within a 10-15 minute walk of the transit hub. These areas will be twice as dense as the original block. DSI will feature a small front and rear yard and detached garages accessed from the rear alley. If desired these rear detached garages can be used as auxiliary dwelling units. Recreational facilities, open space, parking, and local services and amenities will be located in the supporting context.

## **Parking**

Parking will be addressed in a variety of different ways. The largest parking demand is that of the transit hub, followed closely by the demand of the office and residential uses of the Mixed-Use Village. This parking demand will be met by a large underground parking structure located directly under to great mall area in the center of the development. Parking demands for the retail, commercial, services, and amenities located within the Mixed-use Village will be met with on street parking on every street. Special parking needs for the Mixed-use village will be met in the center of the blocks accessed by marked alleys. Apartment parking needs will be met with parking within the block and visitor and extra vehicle parking will be met with on street parking. Townhouse parking will be met with tuck-under parking accessed by the alley. Visitor and extra

## **Program**

vehicle will be met with on street parking. DSI parking needs will be met with a detached garage accessed by the alley. Visitor and extra vehicle will be met with on street parking.

### **Alley System**

The alley system within this Transit Oriented Development is a very important element to the efficiency of the blocks. Alleys allow people to walk safely throughout the block, access off street parking, and access garbage and other pickup/utility services. These alleys help take the pressure off multiple uses of the primary streets, and allow the streets to be cleaner, safer, and more beautiful people places.

### **Green Efforts**

Green Efforts are afforded when ever possible with in the development. Trees, vegetation, open green space, street-side rain gardens, bioswales, permeable paving, and pervious pavers address stormwater considerations. Ample Tree canopy cover, open green space, green roofs, and proper albedo-rated colors of paving and roofing materials will address urban heat island considerations. Local food production will be achieved within the residential blocks pocket parks, small yard gardens, and roof top gardens. Energy considerations will be addressed by well-built and designed structures that will address natural conditions such as wind and sun angles. Photovoltaic Panels (Solar Panels) will be oriented on the roofs of southern facing roof planes to take advantage of sun angles. Streetscape Design and the Monon Trail and open park space will allow people of Martindale Brightwood to feel comfortable walking, jogging, playing, and biking will open up multiple wellness opportunities. The commuter rail line, bus routes, regional Monon Trail, and street bike lanes will allow people to feel comfortable and safe. These Multi Modal opportunities reduce the dependency on the automobile and in turn reduce greenhouse gas emissions and fossil fuel dependency.

## Design Process

This project has taken many twists and turns throughout the year. The site through a design charrette that I attended and participated in. Initially a linear urban park was proposed that would stretch up and down the abandoned industrial corridor along the Monon Trail and abandoned railway. However, through further design inventory and analysis, it came to the conclusion that a linear urban park was the not the best application of Landscape Architecture for the project site and. These issues included the economic feasibility of just a park being a revitalization catalyst, the site was already abandoned and neglected to the point it was wild with vegetation and small trees. In a sense it was already a park without a maintenance budget. No matter how beautiful the park it wouldn't have the type of mold breaking impact that the neighborhood deserved.

Proposing a Mixed Use Urban Village around a park was my second big idea. This concept acted as a revitalization catalyst quite well, it localized amenities and services that currently had no pattern and were located far apart out of walking distance. Retail, Commercial, Amenities and Services would bring people to the development daily. It also increased the residential density through the upper floors of the upper stories of the Mixed-use Development. Developing only the primary area, would neglect the residential neighborhoods. Infill on blocks nearest to the primary development will residential developments of different scales and densities. Residential infill stopped at the point where the urban fabric stopped unraveling.

The Transit Oriented Development (TOD) idea blended the best parts of the first and second big ideas with the Indianapolis's newly proposed mass transit system. The new proposal transformed the abandoned rail line into the newly proposed light commuter rail line that would allow regional and local connections to the north and south Indianapolis suburbs to the inner city of Indianapolis. It blended peoples needs, living in the new residential infill, Mixed-Use Development, and people wanting to live there for the increased walkability, open space and park system, unique streetscape, and green efforts with the Monon Trail and the homerun hitting transit hub that will allow regional and local connects quickly and smoothly without depending on automobiles. This idea supports the triple bottom line of economic sustainability, social sustainability, and environmental stewardship that make this landscape architecture thesis project both complete and comprehensive, blending knowledge accrued from my five years of the study through the College of Architecture and Planning, Landscape Architecture Department at Ball State University.

# Design Process

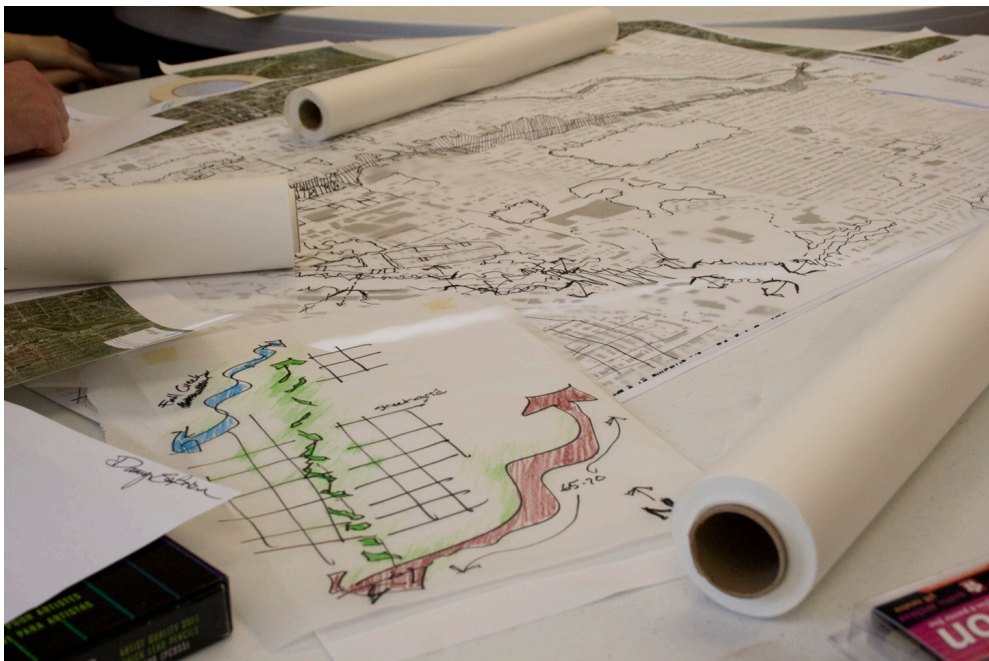


Figure 4: **Design Process**



## Methodologies

The methodology was used to research how a transit oriented development will serve as a revitalizing catalyst, creating linkages between neighborhoods, and establish a set of ecological guidelines, and how this related to a site in Indianapolis Indiana. Many research methods were be used to gather primary and secondary information on each sub problem.

To determine how a urban transit oriented development will serve as a revitalizing catalyst, primary and secondary research methods will be employed. The work of the current leaders in civic revitalization was reviewed to identify key concepts and economic and social benefits. Tom Murphy is a Senior Resident Fellow for Urban Land Institute. He is an author, speaker, and the former Mayor of Pittsburg. He has over thirty-five years of professional experience in public policy and urban revitalization. He also has over forty publications. As a Mayor of Pittsburgh, he leveraged 4.5 billion dollars in economic development. He also played a role in the strategic transformation of more than 1,000 acres of Brownfield, abandoned, and industrial properties into mixed use developments. He oversaw the development of over twenty-five miles of waterfront trails and urban green spaces.

Secondly, Thomas Balsley work was exemplary work in urban parks was reviewed. For thirty-five years he has led his own Landscape Architecture firm, Thomas Balsley Associates. It is a multi-disciplinary firm specializing in Landscape Architecture, Site Planning, and Urban Design. Balsley specializes in landscape urbanism in public parks. Thomas Balsley associates are best known for design participation in over one-hundred urban parks in New York, most notably, Riverside Park, Gantry Park, and Chelsea Waterside Park. Parksandpeople.org was utilized for its resources, finding how parks and open space can help and rejuvenate underprivileged communities. It is also a great resource to find publications related to urban park design in underprivileged communities. "Essay: The Shape of Downtown", is an article/essay written by Christopher B. Leinberger which discussed the essential elements to a successful American Downtown. Leinberger is a partner in Arcadia Land Co., which is a new urbanist development firm from Philadelphia PA. He also maps out a 12-Step program, which he feels, was taken into consideration for a successful downtown redevelopment.

To determine how a linear urban park can create linkages between neighborhoods, primary and secondary research methods will be employed. These books and journal articles will be found in the Ball State University's Architecture Library. Rethinking Urban Parks written by Setha



Low reviewed multiple cities parks such as Central Park, Prospect Park, Pelham Bay Park, and much more. This book argues cultural diversity is the key goal in designing and maintaining a successful urban park. Park use, historical significance, and material selection all are considered factors of park design. This book is complete with useful charts, tables, maps, photos, and drawings. Setha Low is a Professor of Environmental Psychology and Anthropology and Director of the Public Space Research Group at the University of New York. "Cities" written by the famous landscape architect Lawrence Halprin was reviewed to understand the elements of a landscape that contribute to connectivity. He outlines the elements of a city in very simple ways. Halprin examined the landscape of the urban realm, explaining open spaces, and the functions within them. Photos, diagrams, plans, and sections all make this book complete. "The great Neighborhood Book: a do it yourself guide to placemaking", by Jay Walljasper was reviewed to better understand the linking elements of urban revitalization projects. I used an online source [www.pps.org](http://www.pps.org), which is a great place to find information for public spaces. It is full of resources for a variety of different public parks. PPS also shared programming information, resource links, and new news about public parks, plazas, and squares.

To determine how a linear urban park can establish a set of ecological guidelines, primary and secondary research methods were employed. "Ring of Green" is an article describing a greenway belt that was built on an abandoned heavy freight railroad line that surrounds the city of Atlanta. "Contemporary American Landscape Architecture" by Gavin Keeney was a complete compilation of contemporary projects across the U.S. In these projects are well documented with pictures and descriptions of the projects. These projects all use plant material in a variety of ways for a variety of uses. "Old Cities /Green Cities" by Blaine Bonham Jr. was reviewed to examine how landscape and nature has began to fill the voids left but abandoned and deteriorating spaces of the built environment within urban communities.

There was also be a general collection of information to complete the overall process of this Urban Transit Oriented Development Thesis project. I was under the guidance of Malcolm Cairns, as well as other professors of Landscape Architecture at the College of Architecture and Planning Ball State University including studio professors Joe Blalock and Chris Marlow. Information was also acquired about the demographics and density analysis from the Brad Beaubein a Ball State University professor of the Ball State University's masters in Urban Design Program. Maps will be gathered from a GIS databases, high resolution aerial imagery, and Sanborn Maps will be used to better understand the sites condition, and historical circulation patterns.

There were also be multiple visits to the site took record site inventory, analyze the site, I also identified plants, and built a digital photo library of the site. I walked and rode my bike up and down the greenway and surrounding neighborhood blocks to get a first hand account of the sense of safety and enjoyment. I also visited the Monon Greenway in other areas around the city to observe how the trail is working and how the experience varies from the Martindale-Brightwood neighborhood.

## Location/Vicinity Map Site

The project is located in Indianapolis Indiana, more specifically the northeast neighborhood of Martindale-Brightwood. The city of Indianapolis acts as both the states biggest city, and the states capital. Martindale-Brightwood Neighborhood is located less than three miles from the circle in downtown Indianapolis. It has a rich Black American history and according to the 2000 census is nearly 97% black. Martindale-Brightwood has been a chronically neglected and underachieving area and has some of the highest vacancy and crime rates and lowest walkability and safety rate. The surrounding context includes The Indiana State Fair Grounds and the Pepsi Coliseum, which host large events that draw large amounts of people throughout the year. Fall Creek, a tributary that flows into the White River. Douglas Park golf Course, a public nine-hole golf course that has a rich history for black golfers, has hosted black PGA tour events, and was a major black icon of progression and class. The park also has a football field, baseball field and beautiful mature trees. Abandoned industrial corridor, a four miles stretch of abandoned or almost abandoned industrial/manufacturing buildings, junk yards, and salvage yards. The Monon Trail a major regional local bike/pedestrian trail, runs directly though the industrial corridor, adjacent to an abandoned rail line. The Monon stretches to the North Suburbs of Indianapolis to the Indianapolis Cultural Trail: it also connects to the Fall Creek Greenway.

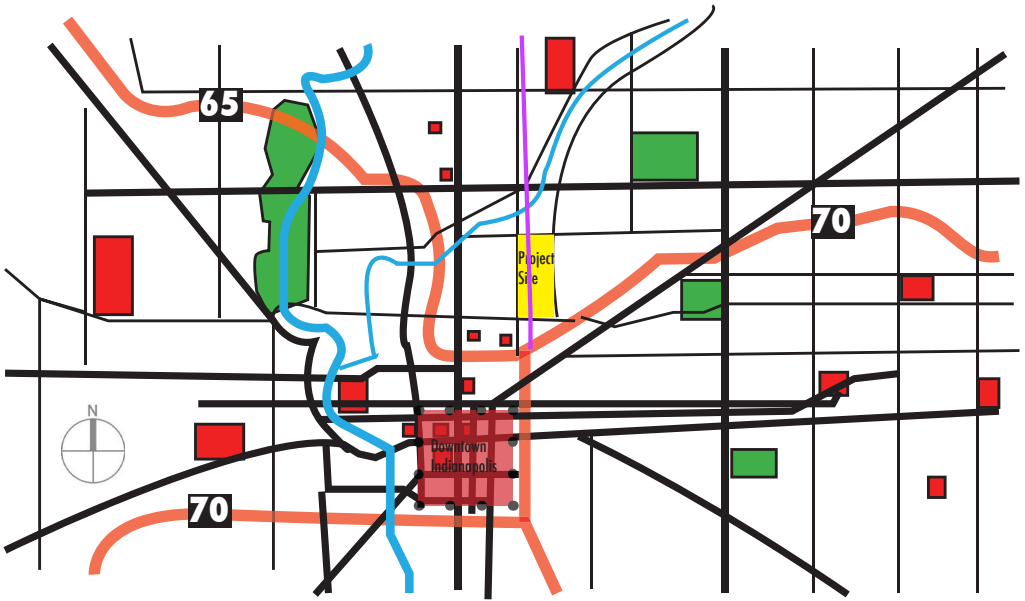


Figure 5: **Vicinity Map** show the proximity of important locations in Indianapolis to the project site highlighted in yellow.



# History

## 1870-1900

Martindale-Brightwood is a neighborhood located near the northeast side of Indianapolis Indiana. This neighborhood was once two independent settlements. Railroad workers working on the "Bee-Line" which was the railroad center of Indianapolis settled Brightwood in 1872. Machinist and manufacturing industrial workers settled Martindale in 1874. The areas quickly became some of the hardest-working suburbs in Indianapolis. In the late 1800's these communities were primarily made up of blue-collar workers. The population was made up of a diverse group of African Americans, Germans, Irish and English.

## 1900-1920

Both neighborhoods grew into small towns that were annexed Indianapolis. Both towns featured high schools, water works, and two well known volunteer fire departments. These neighborhoods were known as thriving towns that acted like a big family. At the turn of the century these towns were prospering due to the railroads and industrialization. One of the biggest employers was the Big Four Railroad, which connected to Chicago, Cincinnati, Cleveland, and St. Louis. During the early 1900's Martindale-Brightwood built new parks and a playground as well as multiple new schools. Douglas Park was built in 1921 along with an African American School.

## 1940-1960 to 1990

In the 1940s the original railroad industries were relocated and Brightwood built its own station. The loss of the major railroads was the initial downfall in the during the post war years. During this transition time, people moved out of urban Indianapolis to the far suburbs. This created an influx of housing that was followed by an arrival of lower income African Americans. During the 1960s the interstate systems ripped through the Martindale-Brightwood Area. Indianapolis as a whole benefited from the interstates, but Martindale-Brightwood paid the price. With the outsourcing businesses, and decreased railroad activity, Martindale-Brightwood was labeled poor, and below poverty level. The neighborhood was paralyzed by the increase in crime, drug activity, and combat gang activity up through the early 1990's.

# Community

## Church, Education, Community Groups

Throughout the decline to Martindale-Brightwood there are many inspirational people and organizations that have kept spirits and pride high. Particularly churches and schools have been the backbone of the community. The church was a powerful tool in desegregation movements as well as acting as community centers and shelters. Early schools were some of the first national recognized African American Congress of Parents and Teachers. Block clubs have also been formed to fight unemployment, crime, and lack of business in the area. Today the neighborhood has six small community centers. According to an IUPUI source, “The neighborhood will look for some for these answers in the past which offer a picture of people, organizations, churches, and businesses working together to promote the wellbeing of their neighborhood.”



Figure 6: **Community Charrette Presentation**

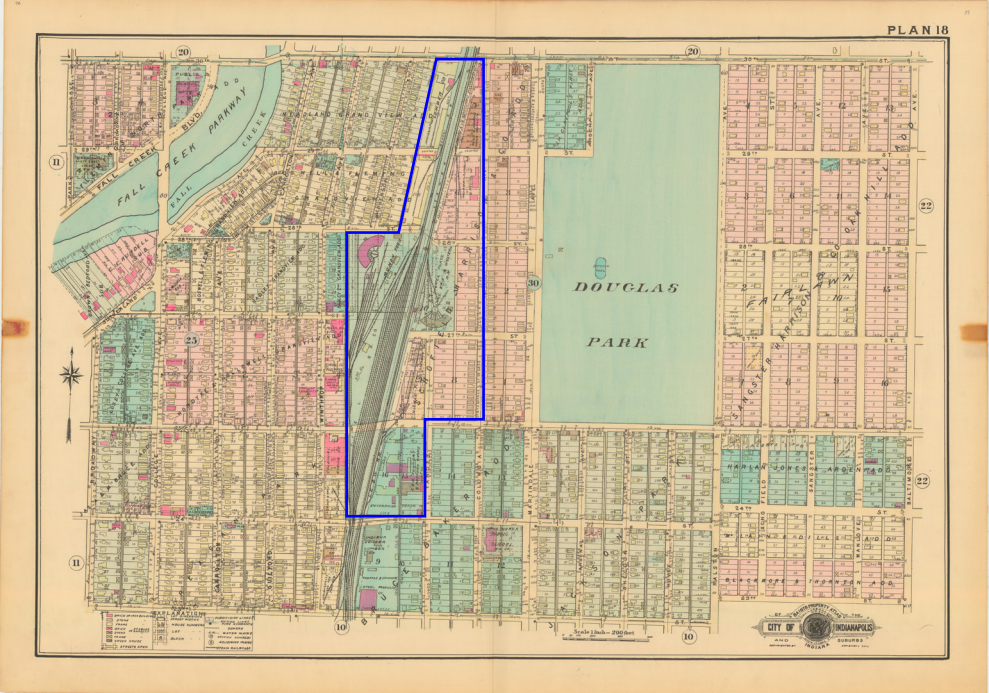


Figure 7: **Site Aerial 1941**

- 1** Railroad Infrastructure
- 2** Vibrant Industrial Corridor
- 3** Dense Residential Community
- 4** Industrial Heritage
- 5** Douglass Park





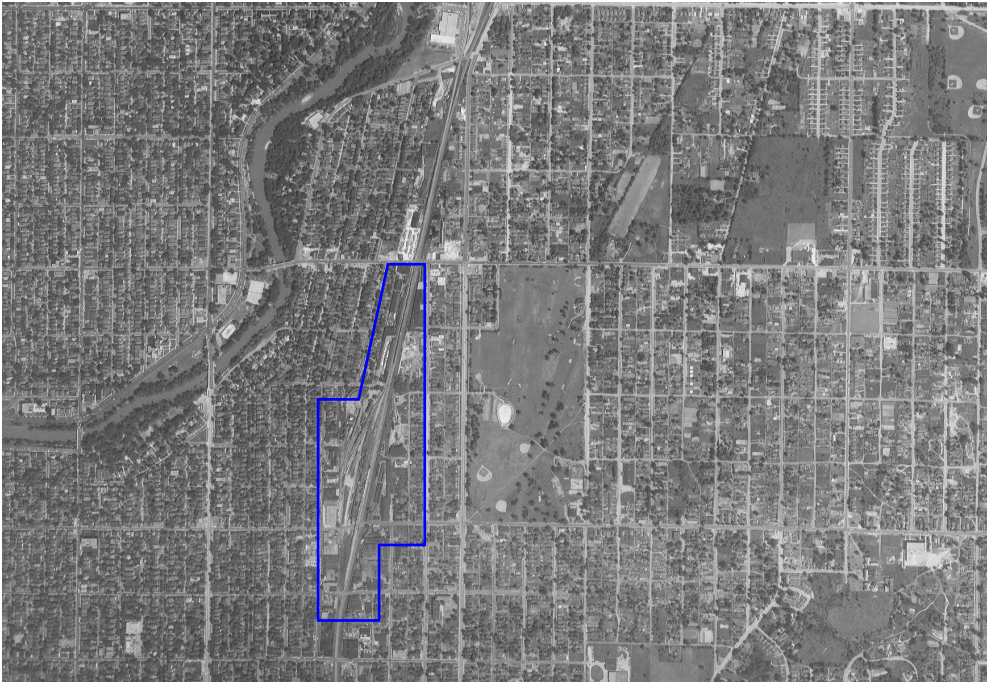


Figure 8: **Site Aerial 1956**

- 1** Less Railroad Infrastructure
- 2** Industrial Corridor
- 3** Dense Residential Community
- 4** Transition Industrial Heritage
- 5** Douglass Park





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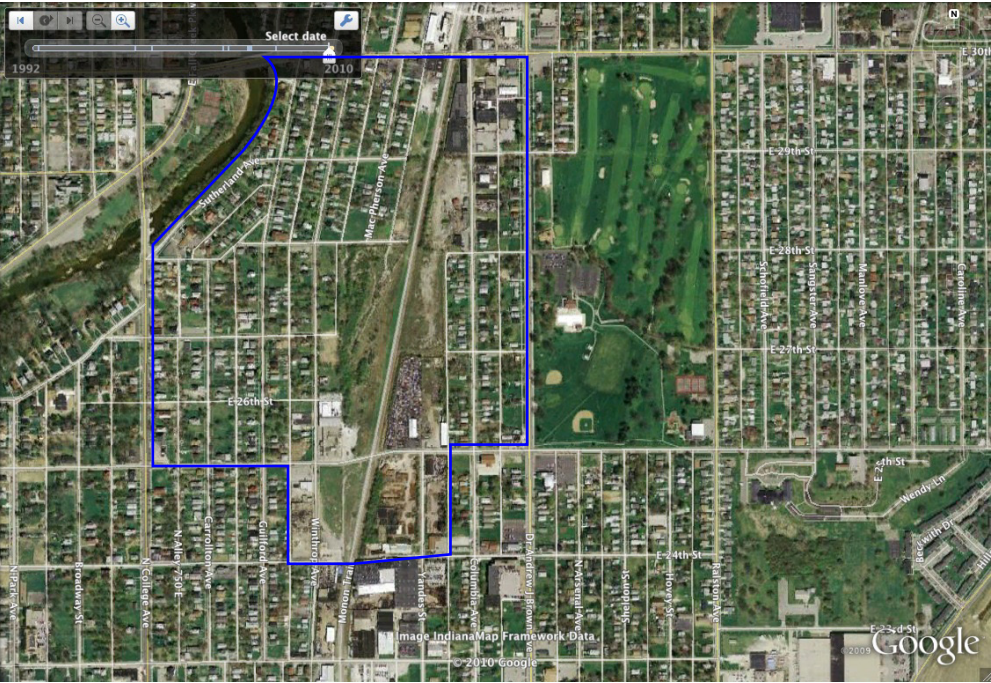


Figure 10: **Site Aerial 2010**

- 1** Abandoned Railroad Infrastructure
- 2** Nearly Abandoned Industrial Corridor
- 3** High Vacancy Rate on the Blocks
- 4** Monon Trail
- 5** Douglass Park



# MARTINDALE BRIGHTWOOD SDAT COMMUNITY CHARRETTE

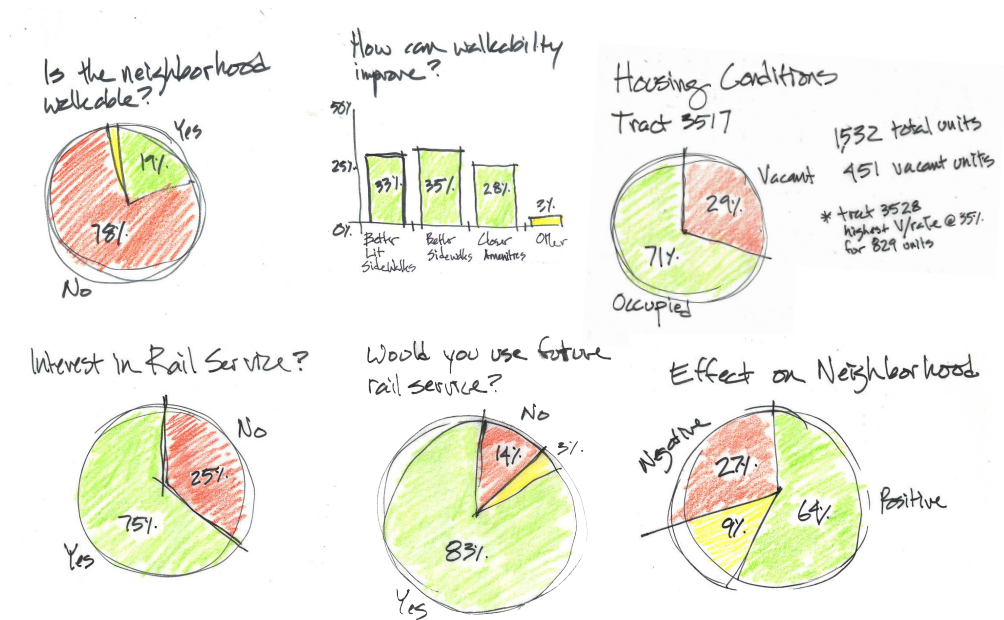


Figure 11: Charrette Surveys

- 1 Lack of Walkability**
- 2 Lack of Multi Modal Transportation**
- 3 Low Occupancy Rate**
- 4 Industrial Corridor Creates a Void**
- 5 Undesirable Place to Live, Work and Play**

# INDIANAPOLIS MASS TRANSIT SYSTEM

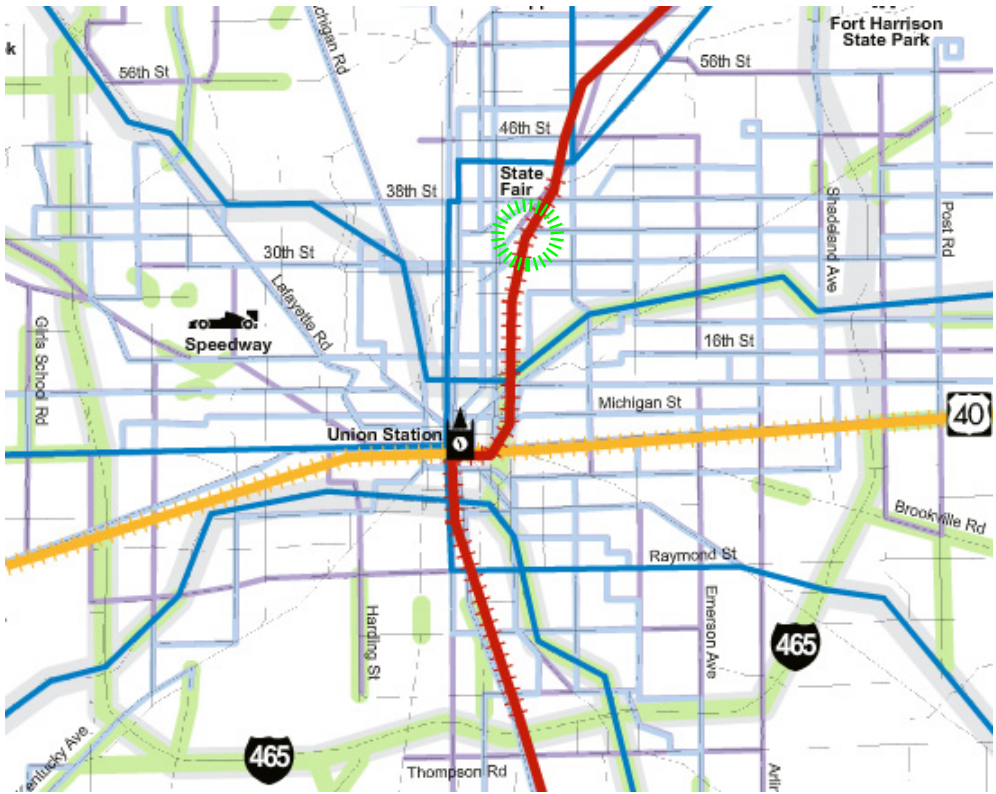


Figure 12: **Proposed Transit Plan**

- 1** Regional Connections
- 2** Local Connections
- 3** Light Commuter Rail
- 4** Commuter Rail



# **Inventory**

## **Site Inventory**

During the process of gathering site inventory I have made multiple site visits walking up and down the corridor, and driving around the surrounding blocks, and walking Douglas Park. I have personally seen the vacant and boarded up homes, the overgrown wild yards, all the while getting a glimpse of the Indianapolis skyline. I have listened to the community members at a community meeting and heard their distress and concern of their current situation and their outlook and opinions of the further. I can also imagine helplessness it must feel to raise a family on a block of abandoned, rotting houses. I can image the uncomfortable feeling of walking down the dark, cracked, uneven sidewalks at night. However I have heard the passion, pride, and optimistic view of the future that the people of Martindale-Brightwood have expressed about their neighborhood.

## **Land Use Inventory**

From the Land-Use maps I have found where the major residential pockets are as well as their respective densities. The lands use also illustrated the vacant lots within the residential pockets. There were a lot of commercial pockets within the area, however upon a deeper look these commercial land uses were, junk yards, salvage yards, and other less than attractive commercial businesses, which had little human interaction benefits. I have located the local parks and green space Fall Creek, Douglass Park, Soccer Park, George Washington Park. I have also located certain historical sites and schools.



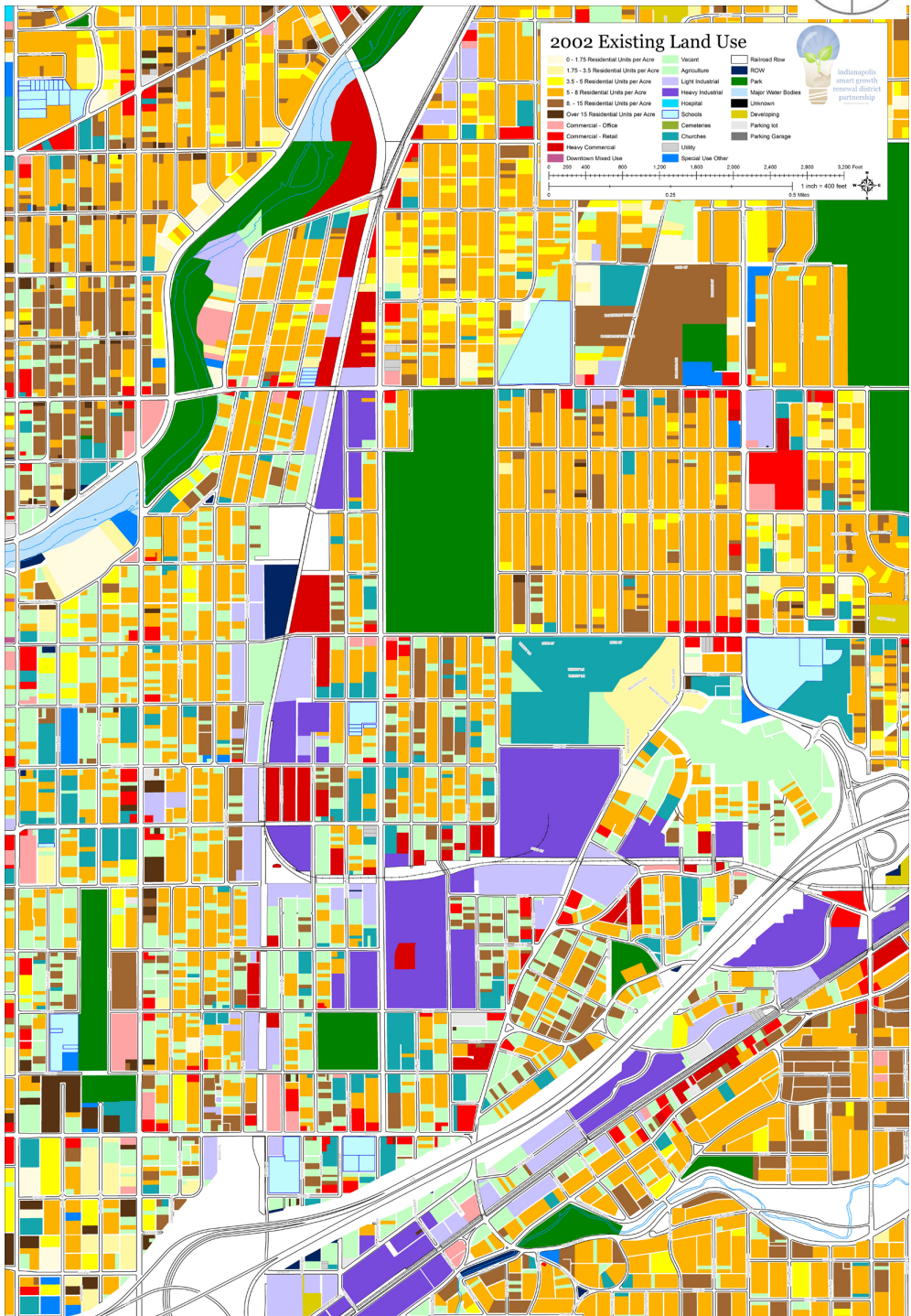


Figure 13: Land Use Inventory

## **Inventory**

### **Figure Ground Inventory**

The Figure Ground Study illustrates in plan view the density of buildings and shows the voids in the urban fabric. These voids are either gaps in the built environment or park space. It is also valuable to see the difference in the scales of the building footprints; this can indicate the potential use or reuse of the building. The figure ground is most useful when proposing potential infill areas. The large void in the center of abandoned industrial corridor is my primary development site.

### **Circulation Inventory**

The circulation study focused on the vehicular movement through Martindale-Brightwood. There are about twice as many streets oriented north-south than east-west. The largest road within the area is Interstate 70. The primary north-streets are College Ave and Keystone Ave. 25th Street has a higher volume of traffic than 30th. 30th and Andrew J. Brown Ave are similar in volume. The interior residential street has a very low volume of traffic. The interior streets also have n street parking; however there are not many cars parked on the street due to the low occupancy rates. The Streets are wide enough to implement bike lanes without sacrificing parking. The alleys are well used but they are not paved and are extremely muddy and full of ruts and holes. It is clear to see that not everyone within the poorest residential block have cars, and many depend on bicycles. Additionally it is interesting that many to the streets do not accurately line up once they pass the abandoned industrial corridor. There are dead ends within the primary development site. The residential blocks on the northwest side of the development site are oriented along the abandoned rail line and Monon Trail. Douglas Park, Fall Creek, and the abandoned industrial corridor create the three biggest circulation barriers within Martindale-Brightwood.

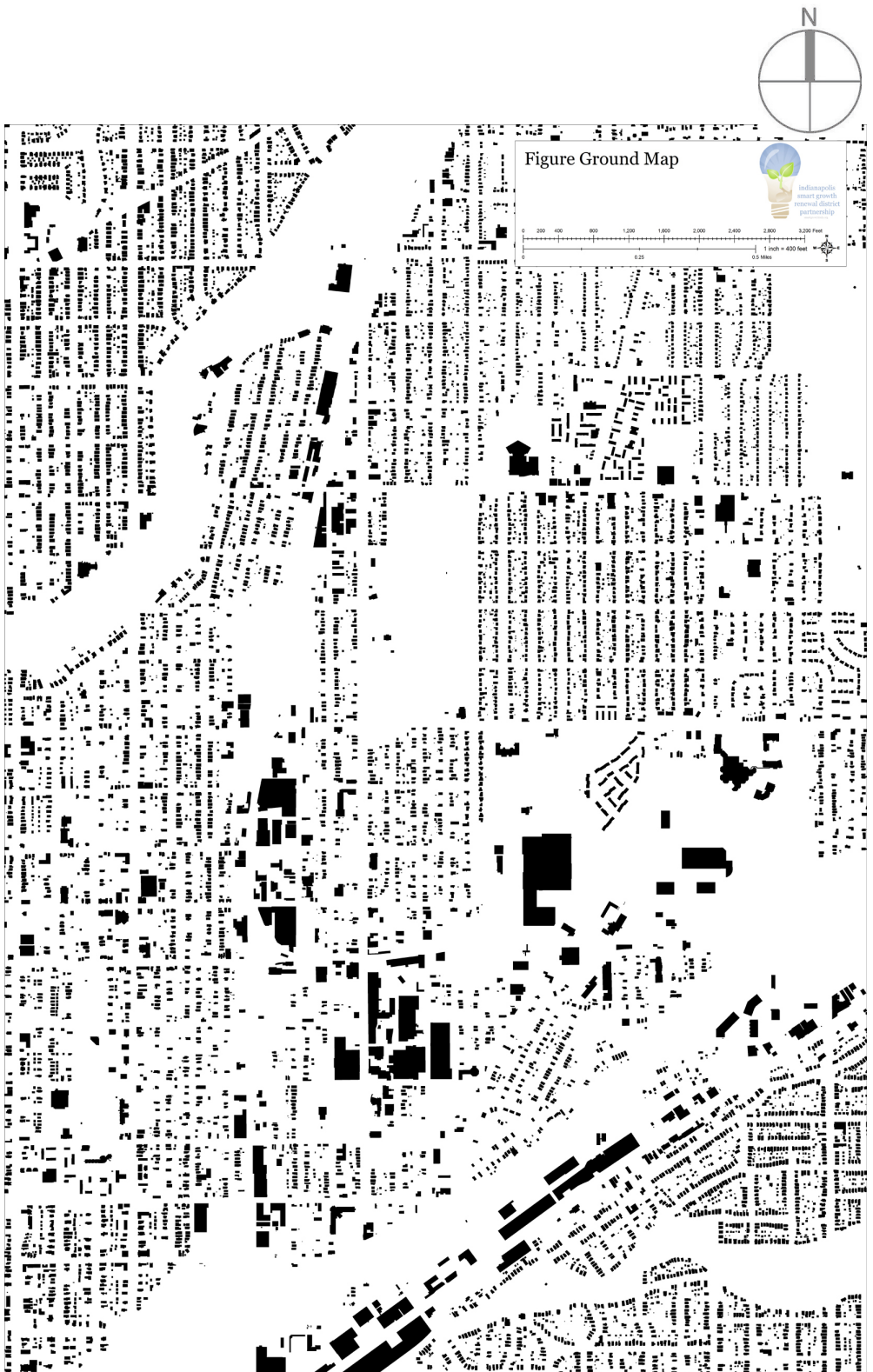


Figure 14: **Figure Ground Inventory**

# Analysis

## Land Use Analysis

The Land use Analysis is very useful as a tool to understand the site elements, their importance and what they really mean in context. The Land-use Diagram locates important uses such as varying residential densities, commercial pockets, greenways, and industrial uses. The Locations of these uses allows patterns to be established: Live to Work to Play. The varying densities and pockets of residential areas located where the most people live and what directions they will be coming from. The more people, the more services, amenities and open space will have to be accommodated. It also begins to show where connections need to be established, enhanced, or enriched. The large amounts of vacancies on the east side of the abandoned industrial corridor, allow for rapid infill, without creating urban sprawl. The expansion will be filled with new people that want to live near a Transit Hub and a walkable well-designed neighborhood in close proximity to local amenities and services.

The abandoned industrial corridor currently acts as barrier to the site. The businesses are abandoned primarily from the absence of the railroad, which made receiving and shipping of products easy and affordable. The current state to the economy also has had an effect of the corridor. However, in the future the economy is bound to raise and thrive again. These collections of buildings and properties will be in a great location, and affordable for new businesses, manufacturing, and factory purposes. The reuse of these buildings properties could potentially provide and overwhelming amount of jobs. These jobs could foster, green technologies and green industrial opportunities. The abandoned industrial corridor is bare-bones framework for industries and businesses that will provide jobs and boost the local economy.

**1**

**Residential Density**

**2**

**Abandoned Industrial Corridor**

**3**

**Fractured Urban Fabric**



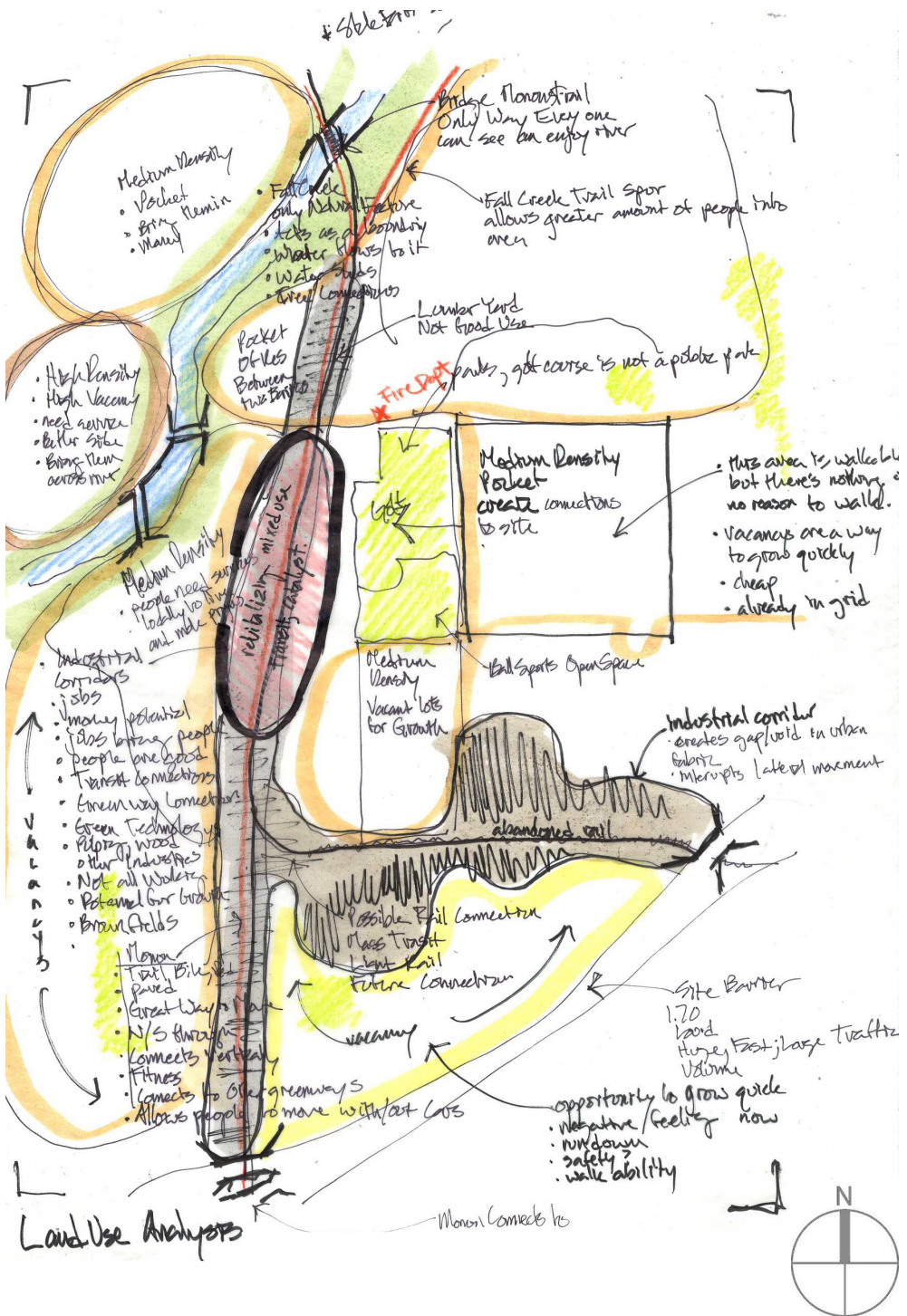


Figure 15: Land Use Analysis

# Analysis

## Figure Ground Analysis

The Figure Ground Analysis shows the patterns, voids, density, and pathways in the neighborhood. Located directly to the east of Douglas Park, is the best representation of the block patterns; the pathways are orthogonal oriented north south. This collection of blocks has the highest block occupancy of any other area, and nearly has complete occupancy. This is important because people feel comfortable with the patterns that have been established. This means the project should establish similar patterns that people can feel comfortable with. Moving from east to west, the pattern begins to degrade severely, due to the abandoned industrial corridor and abandoned railroad that have both changed the orientation of the blocks and created multiple dead ends and awkward geometry. To the west of the corridor the blocks become fractured and the vacancy rates rise drastically. It is also interesting to note that building size compared to the denseness of the buildings. This study shows the best places for residential infill.

**1**

**Successful Block Patterns**

**2**

**Street Patterns**

**3**

**Large Voids in Abandoned Corridor**

**4**

**Abandoned Rail Yard**



# Analysis

## Amenity Analysis

The amenity analysis measures the proximities of local services and amenities to the project site. There were two radius used in this study, one mile for the radii that the TOD would directly effect, and a quarter mile radius one an average pedestrians comfortable walk to a destination. Currently there is no pattern to the placement of these amenities and services. For the 15,000 people of Martindale-Brightwood, there are only a handful of relevant amenities. This analysis shows how far people have to travel, by car, to complete simple errands and meet their daily needs. The analysis shows this looses pattern has helped to lower the quality of life of the neighborhood and significantly reduced the walk ability as well.

- 1** Few Local Amenities
- 2** No Pattern of Amenities
- 3** Identify User Groups
- 4** Douglass Park, Fall Creek



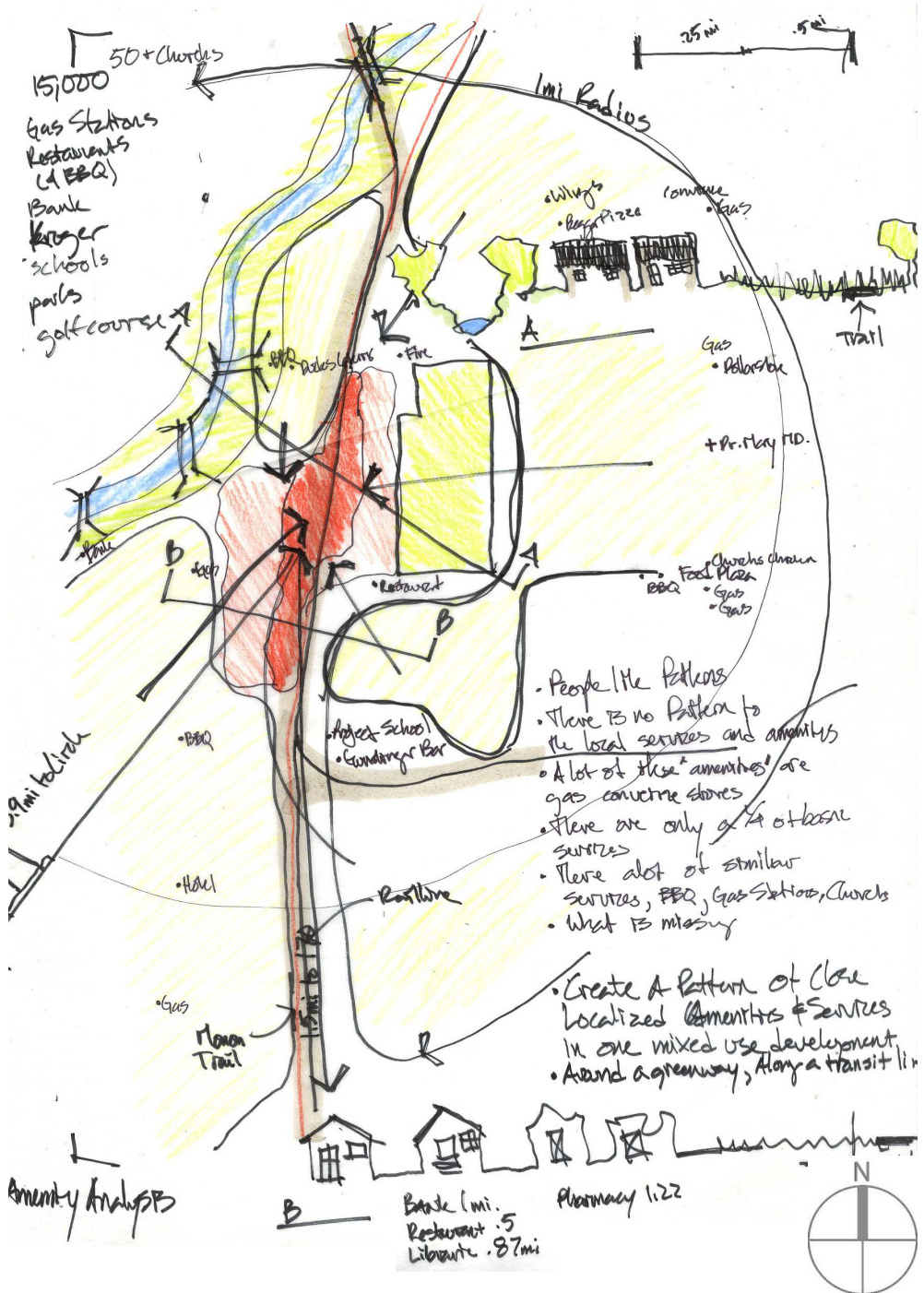
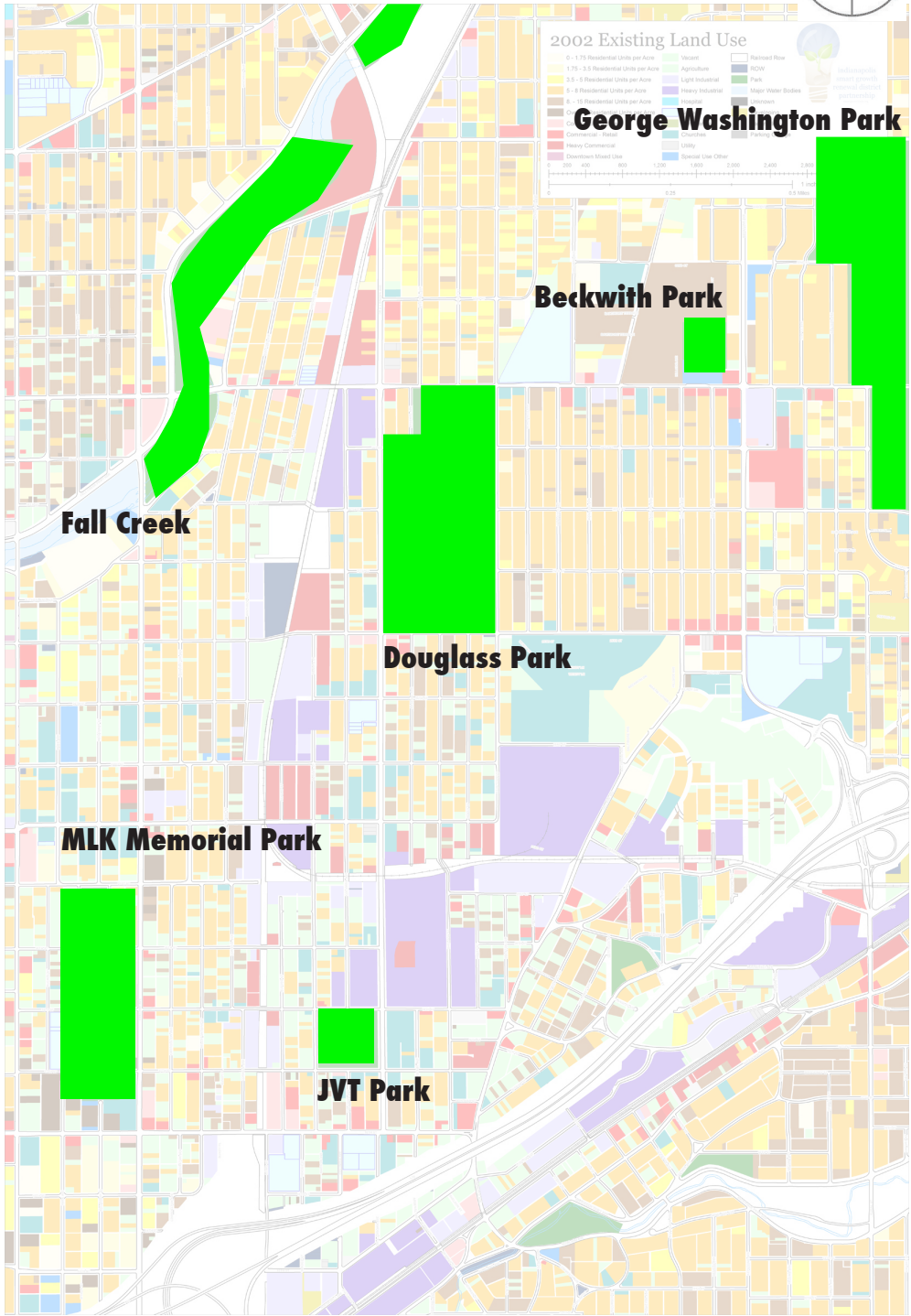


Figure 17: Amenity Analysis

# Analysis

## Green/Open/Natural Space Analysis

The amenity analysis measures the amount of open and natural space around the project site. The nearest park to the project site is Douglass Park Golf Course; it is an old nine-hole course with a rich important history to the community. This Park also has recreational opportunities such as football, baseball and ample open space for a variety of outdoor sports. The park has some dynamic topography and is full of quality mature trees. The park acts as barrier because it interrupts the four city blocks. However, Douglass Park is a great asset and needs to be respected and connected. Fall Creek is the largest natural feature and the banks of the creek act as some of the largest wildlife habitat. Fall Creek is more of a river; spanning 100' wide in some areas. Fall Creek needs to be appreciated and respected due to its natural beauty, and wildlife corridor capability. George Washington Park is the largest park, however it is out of walking distance of the project site. It is an old park and like Douglass Park is full of mature trees. It will be connected by a bike lane proposed on 30th street but will not be the primary focus of my design. There is also one ghost-like grouping of natural wildlife habitat within the Martindale-Brightwood neighborhood. Currently, all of the vacant abandoned, and empty properties that have been neglected and over looked provide an overwhelming amount of bird and small wildlife habitat. Unfortunately, the proximity to the primary development site renders the current wildlife habitat and will mostly be redeveloped into residential infill and the primary TOD development. Some of this habitat will be replaced with the vegetation on green roofs and small pocket parks.



# Analysis

## Site Scale Analysis

The site scale analysis determines the conditions of the site and how these conditions will affect the design of the TOD and residential infill. The overgrown scrubby vegetation will be easily cleared and controlled and will not constrain the design. The vegetation is almost completely invasive and will be removed. There are also many dead ends that “T” into the primary development site. These dead ends will be used to continue the grid and the patterns that have been shown to work through the previous figure-ground analysis. The Monon Trail and new light-rail/commuter rail will run diagonally southwest to northeast through the site. The connections to these features will be extremely important to further expand the ease accessibility to the rail, and enrich the experience of the Monon Trail. Site scale figure-ground reveals opportunities of infill within the primary development site. The figure ground further reveals the holes in the blocks that can easily be infill or converted into pocket parks without destructing and structures. However the quality of the residential structures is extremely poor and structurally unfit in many areas. These buildings will be evaluated then deconstructed and salvaged accordingly. Fall Creek will be involved in the design because it is the single natural feature in the environment. The large triangle-shaped building will be saved and renovated because it is one of the only structures within the site that has some architectural nostalgia and has ties to the industrial and railroad history that made Martindale Brightwood a thriving neighborhood.

**1**

**Opportunities**

**2**

**Constraints**

**3**

**Natural Features**

**4**

**Park and Natural Features**





The site boundaries are:  
 North: 30th Street  
 South: 25th Street  
 East: Andrew J. Brown Ave.  
 West: College Ave



Figure 19: Site Scale Analysis

# Site Photographs



- 1** Abandoned Railroad Infrastructure
- 2** Nearly Abandoned Industrial Corridor
- 3** Monon Trail

Figure 20: **30th Street Birds Eye**





- 1 Abandoned Lots
- 2 Poor House Conditions
- 3 Poor Side Walks

Figure 21: **Vacant Blocks Birds Eye**



- 1 Abandoned Railroad Infrastructure
- 2 Nearly Abandoned Industrial Corridor
- 3 Monon Trail

Figure 22: **25th Street Birds Eye**

# Site Photographs



Figure 23: **Site Photos**

- 1** Abandoned Railroad Infrastructure
- 2** Nearly Abandoned Industrial Corridor
- 3** Monon Trail



# Site Photographs



Figure 24: **Site Photos**

## **Precedents**

### **Brewery Blocks, Portland Oregon**

This TOD has brought new jobs, and investment enriching Portland's entire transit system. This project is an example of blurring the edges between commercial and residential areas. This case shows an example of how the blocks of the TOD can balance the elements of contemporary architecture, adaptive reuse of buildings, and walk able pedestrian scale streetscape. This area like Martindale Brighthwood was stricken with economic decline and a high unemployment rate. The TOD attracted a diverse mix of highly educated, high-income workforce, which in turn attracted business and amenities that provided many jobs to the current residents, which helped the project succeed.

### **Silver Spring Downtown Redevelopment, Springfield Maryland**

Silver Spring is one of Washington D.C.'s oldest neighborhoods that has used transit oriented development to re-energize the once failing downtown. The ability to quickly move in and out of the city with the ease linked the growing residential areas with downtown Washington D.C. Like Martindale Brightwood Silver Spring was established along a major railroad, the Baltimore & Ohio railroad. However in the postwar decades starting in the 1960's people moved to the suburbs rapidly. As the people left Silver Spring so left the businesses and jobs. Silver Spring also had a variety of unique business incentive that accelerated the revitalization process. Grants for facade, street tree canopy, and streetscapes enhancements contributed to the beautification and safety of the area. Business incubators were offered that provided the proper resources and training at a reduced cost to encourage entrepreneurship and new businesses.

### **South Side Neighborhood, Greensboro North Carolina**

This revitalization project turned a once blighted area into a thriving attractive place to live by infilling 30 single-family homes, 10 two family homes, 50 townhouses, 10 historic homes, and 20 live-work units. These residential structure types are very similar to the infill residential infill in Martindale Brightwood. This district was within a five to ten minute walk from a vibrant main street. The infill in Martindale Brightwood will be also within a five to ten minute walk of a commercial, retail and service center, as well as a transit stop and greenway.

## **Precedents**

### **Pearl Street Pedestrian Mall, Boulder Colorado**

The Pearl Street Pedestrian Mall is a vibrant example of walkable urbanism. Pearl Street is decorated with expansive planters, art, fountains, performance areas, and people watching areas. The malls shops and stores are all owned locally which keeps the local economy thriving. Pearl Street is also known for is popular nightlife full of street performances, restaurants, and local bars.

### **Hudson River Green Way, New York, New York**

The Monon Greenway currently runs through some of the most derelict properties in all of Indianapolis, and even though it provides invaluable regional and local connections it is in dire need of enhancements. The Hudson River Greenway is a great example of how a planters, vegetation, streetlights, and traffic lights can improve bicycle safety and the ride experience.

### **Millennium Park, Chicago Illinois**

Millennium Park is Chicago's premier lake front park. It is comprised of many different performance areas, fountains, bridges, and sculptures. The Pritzker pavilion and Great lawn are located on top of a three level parking structure that also allows access of the metro rail line and multiple bus-lines. The great lawn located in the center of the TOD will echo the concepts of the performance and open space acting also acting as a "rooftop" to the parking structure.

# Conceptual Development

## Concept 1

The major theme of Concept one were creating a looping system. Concept 1 features a large common open space that flanks the Monon Greenway and commuter rail line. The transit hub is located in the center of the development. A curved road links up many of the dead ends and creates a unique geometry. A pedestrian mall was located between the retail and commercial district and the mixed-use buildings. The Community Center and trade school are located together because they have similar uses. The trade school is located on the south side of the development to link up with an abandoned industrial building. This building will be used as a workshop for learning trades and skills. Infill has been addressed by increasing the residential density as well as proposing several pocket parks.

- 1 Curvilinear**
- 2 Large Flanking Park**
- 3 Mixed Use Infill**
- 4 Large Community Center Uses**



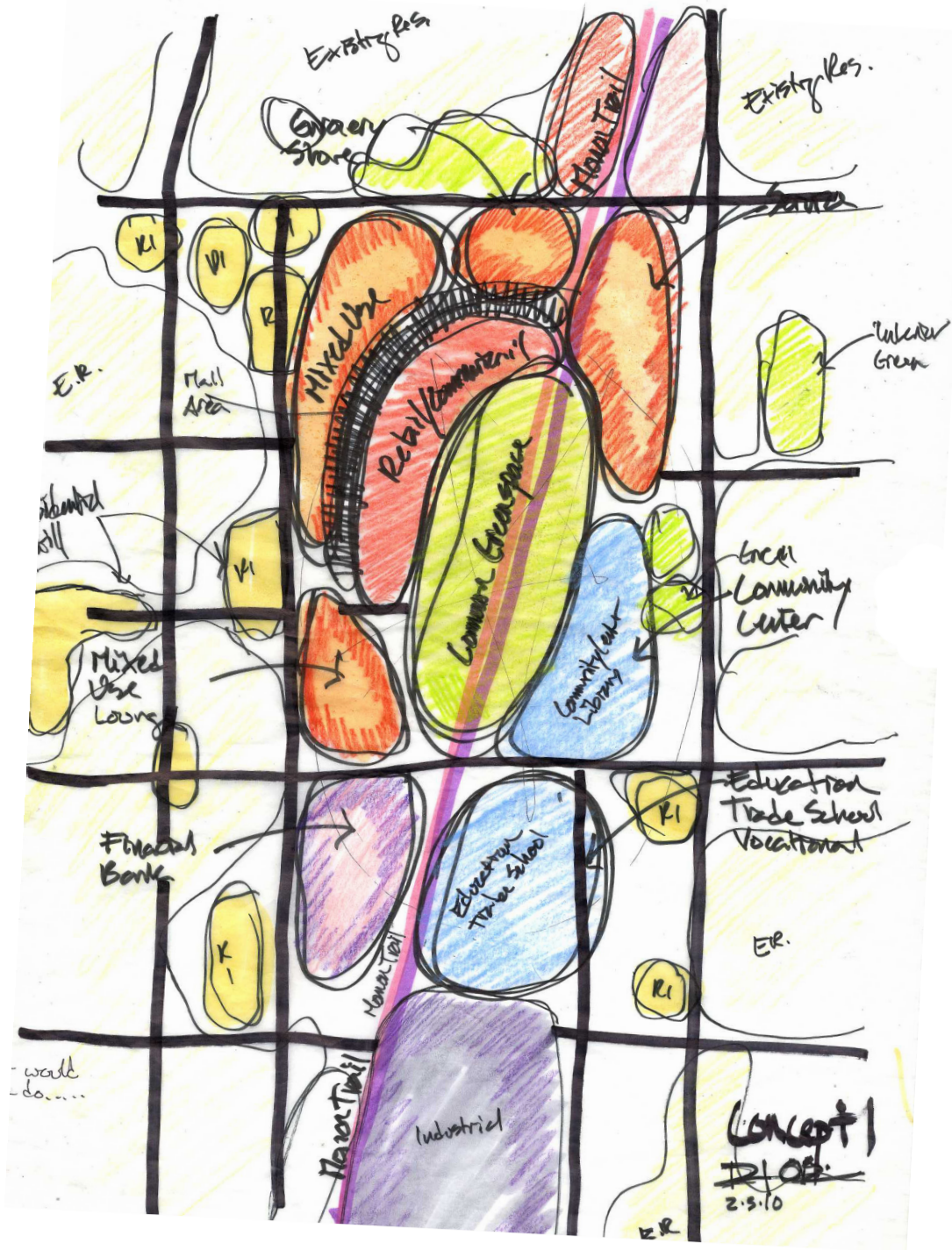


Figure 25: **Concept 1**

# Conceptual Development

## Concept 2

Concept 2 borrowed the best features of Concept 1. This concept features a large pedestrian promenade that stretches from 25th street to 30th street. A pedestrian promenade runs along the Monon Greenway and commuter rail line run directly through the. This concept also has looping systems of services, amenities, retail and commercial centers. This concept also brings high-density residential pockets close to the center of the development. Parks and open space in this concept are smaller and dispersed more evenly throughout the development. The transit hub is located in the center of the development as well. Infill was addressed by creating a large collection of parks that stretched to the east. Other Infill was addressed with large residential infill concentrations.

- 1 Pedestrian Mall**
- 2 Residential Infill**
- 3 Small Pocket Parks**
- 4 Vocational School**

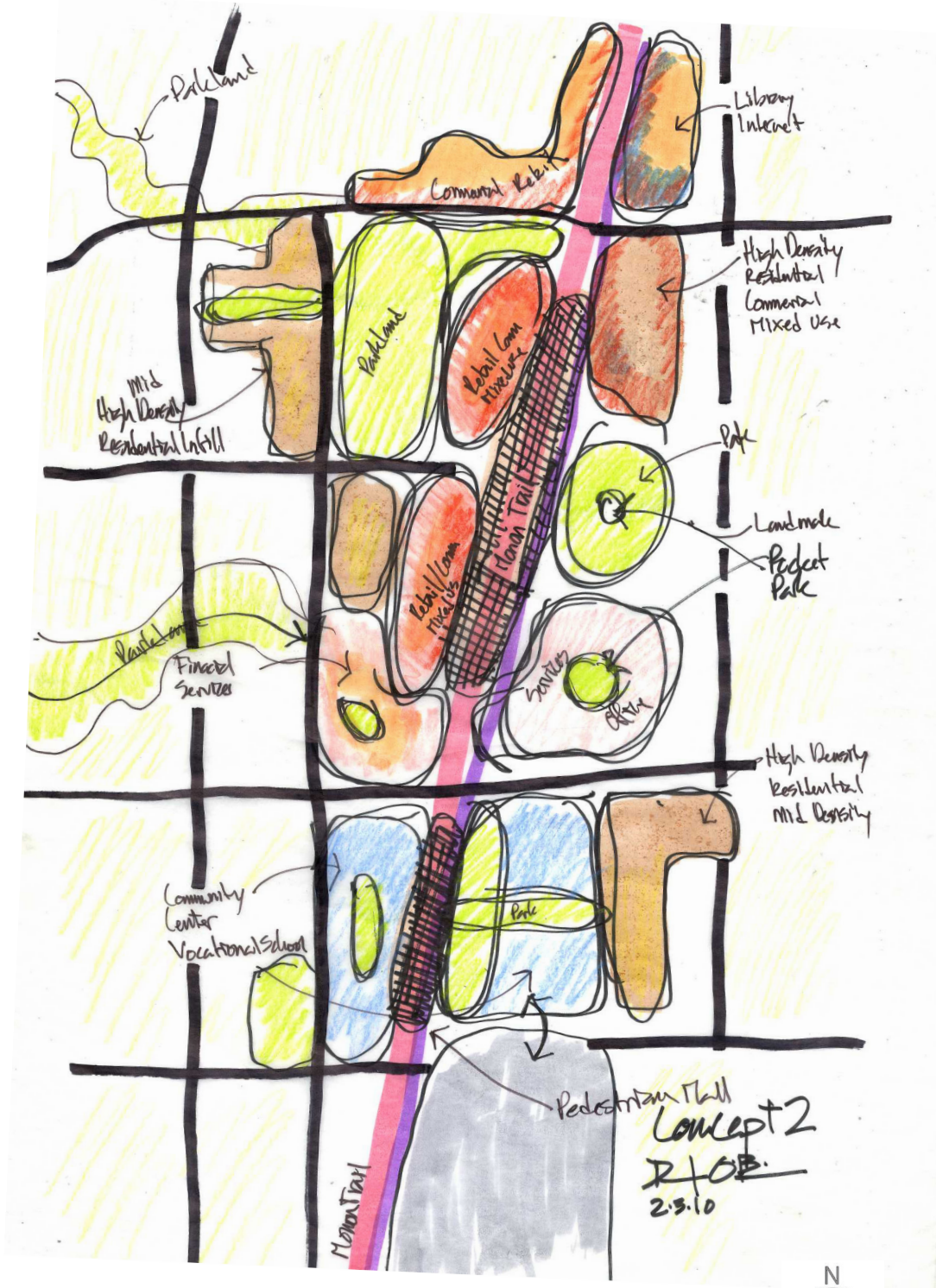


Figure 26: **Concept 2**

# Conceptual Development

## Concept 3

Concept 3 utilizes the strengths of both concept 1 and 2. The organization of the development is a reflection of the prior figure-ground analysis. The new infill blocks are an extension of the existing blocks. The loop system is maintained by the sequencing of land uses. A large park open park space has been rotated to draw people into the sight and create a visual axis to the transit hub. The mixed uses of the buildings are on the opposite side of the great lawn area; this polarization of uses creates pull across the site. The triangulation occurs in the location of the trade school, community center, and library. The surrounding infill is comprised of both residential infill and small pocket parks for the respective blocks.

- 1** **Respect the Grid**
- 2** **Large Park**
- 3** **Diverse Mixed Use Infill**
- 4** **Looping System**



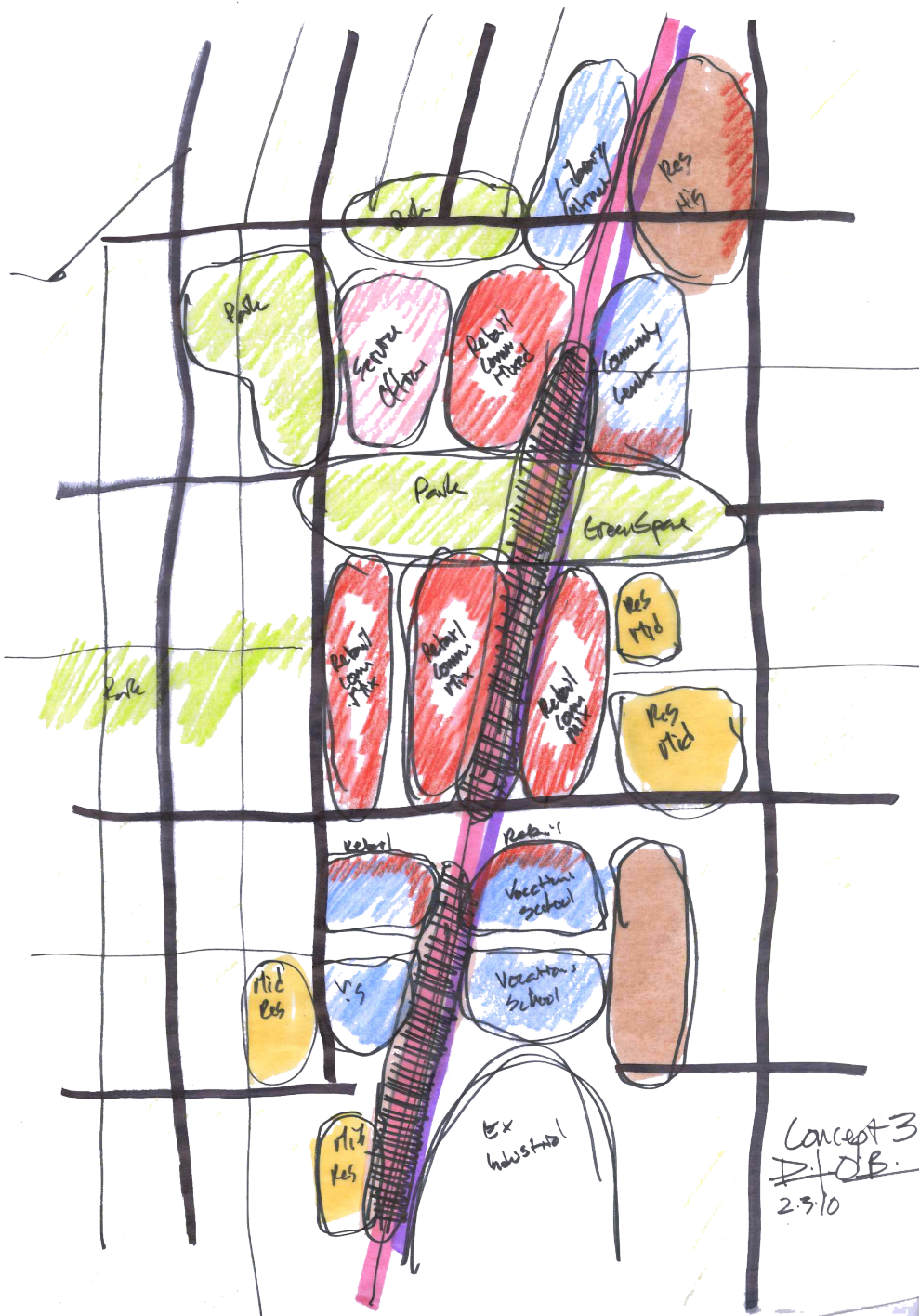


Figure 27: **Concept 3**



- A** Multi Modal Transportation
- B** Localize Services and Amenities
- C** Increase Density and Diversify
- D** Enrich Park and Open Space







Figure 29: Diagrammatic Plan

**SD** Single Family and Duplex

**T** Town Homes

**A** Apartments

**mu** Office Mixed Use

**mu** Commercial Mixed Use

**mu** Special Use Mixed Use

**i** Institutional

## Places of Interest

- |                                           |                                          |
|-------------------------------------------|------------------------------------------|
| <b>1</b> Transit Hub                      | <b>6</b> Business Incubator              |
| <b>2</b> Great Lawn - Underground Parking | <b>7</b> Trade School Campus             |
| <b>3</b> Community Library                | <b>8</b> Light Industry, Trade Work Shop |
| <b>4</b> Community Center                 | <b>9</b> Douglass Park Golf Course       |
| <b>5</b> Fall Creek Over Look             |                                          |

**LI** Light Industry

**G** Green Open Space

**PO** Public Open Space





# Existing Density and Green Space

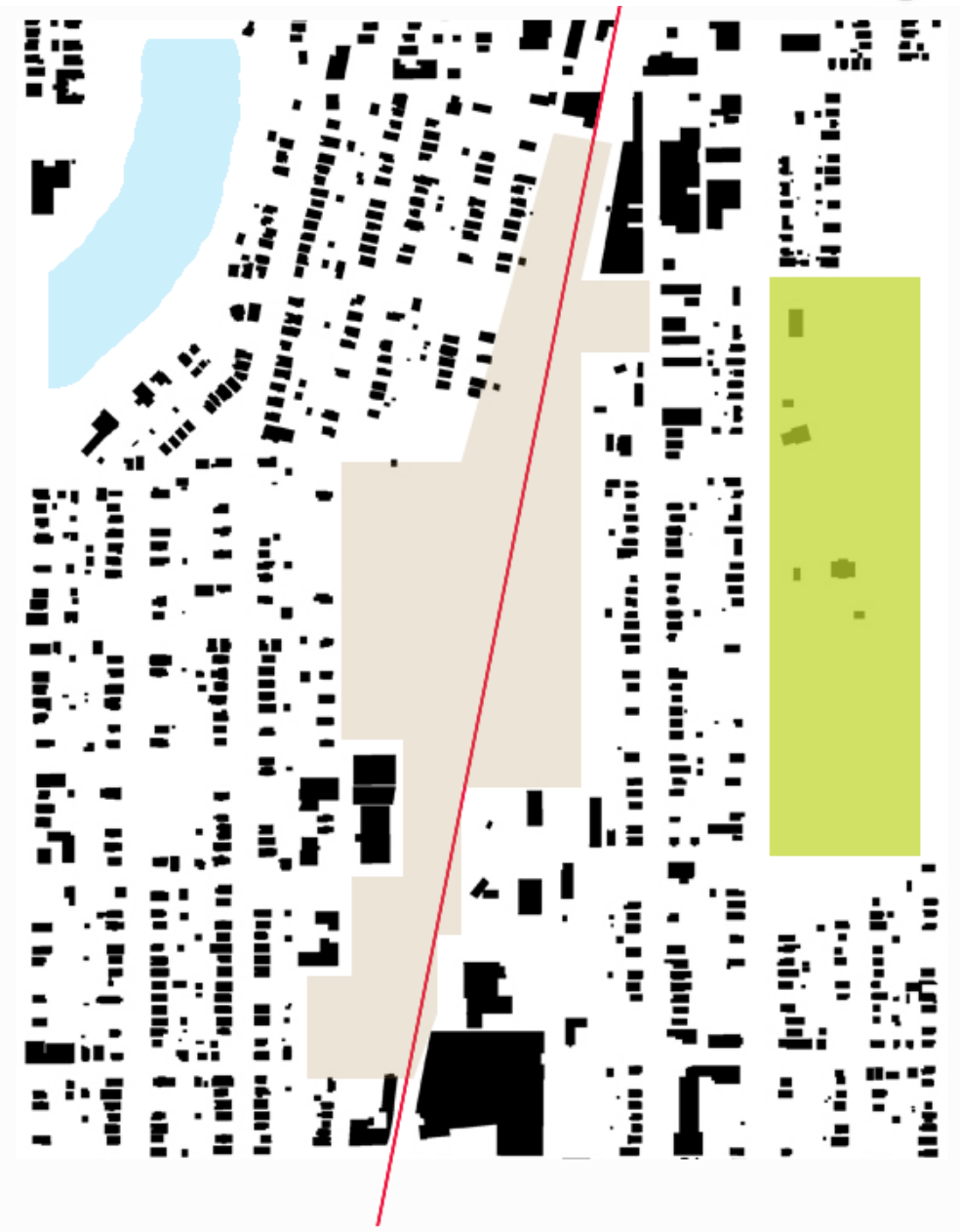


Figure 31: Existing Conditions

# Proposed Density and Green Space



Figure 31: Proposed Conditions

# Systems Diagram

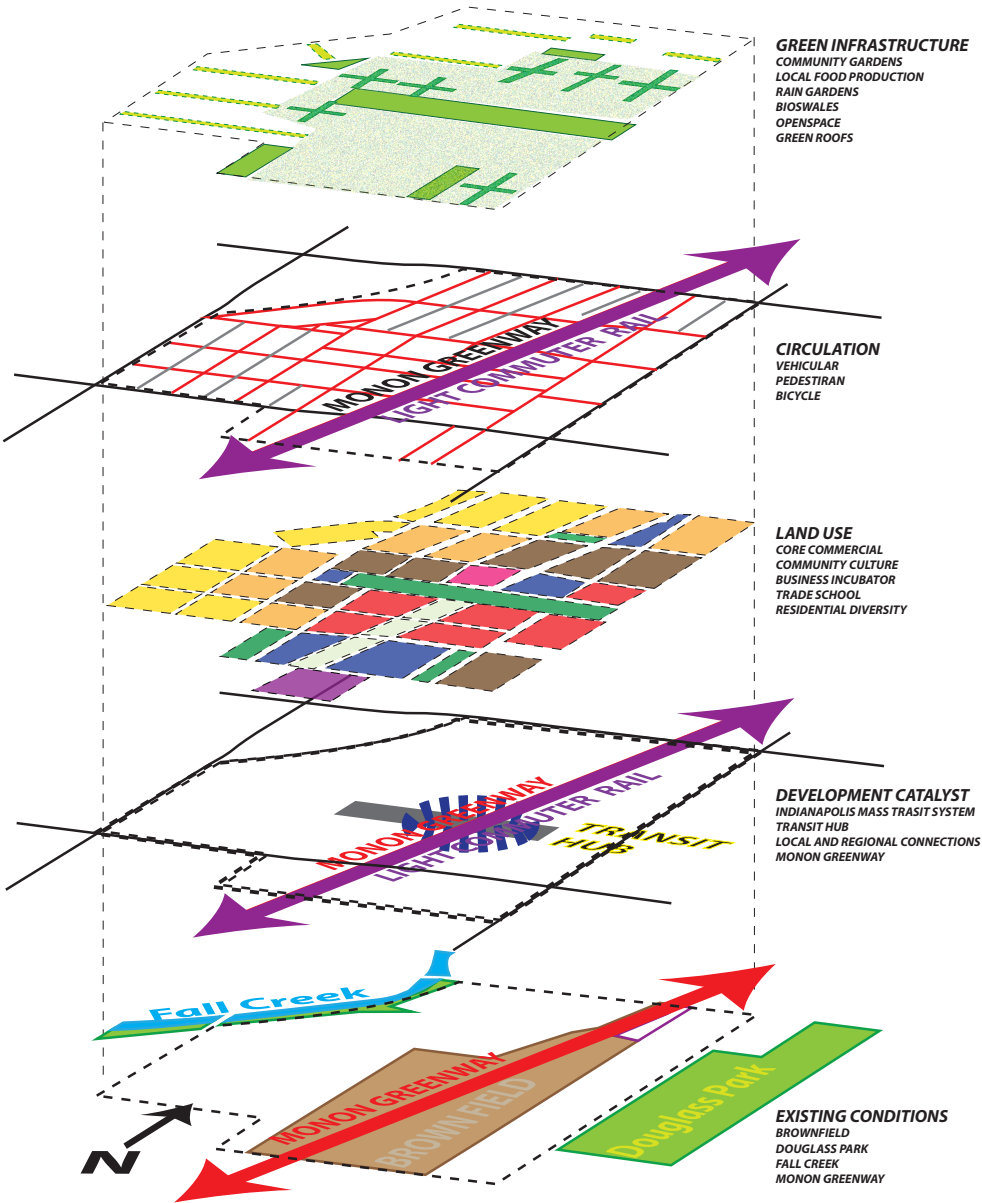


Figure 32: Systems Diagram

- 1 Existing Conditions**
- 2 Development Catalyst**
- 3 Land Use**
- 4 Circulation**
- 5 Green Infrastructure**

# Aerial Perspective





**Figure 33: Aerial Perspective**

This aerial perspective highlights the Great Lawn and Transit Hub. This is the most dense area of the site and consists of Mixed Use Blocks, and Apartments Blocks. Streets are uniformed by Street Trees, wide side walks, and narrow streets.





# Aerial Perspective





**Figure 34: Aerial Perspective 2**

This is a view of the north end of the site's residential infill. In this view three types of housing are illustrated including single family and duplex homes, town homes, and apartments. There is also a pocket park which is used for open recreation at the end of the block. The Monon Trail and Commuter Rail corridor are also shown running diagonally through the site.



# Circulation

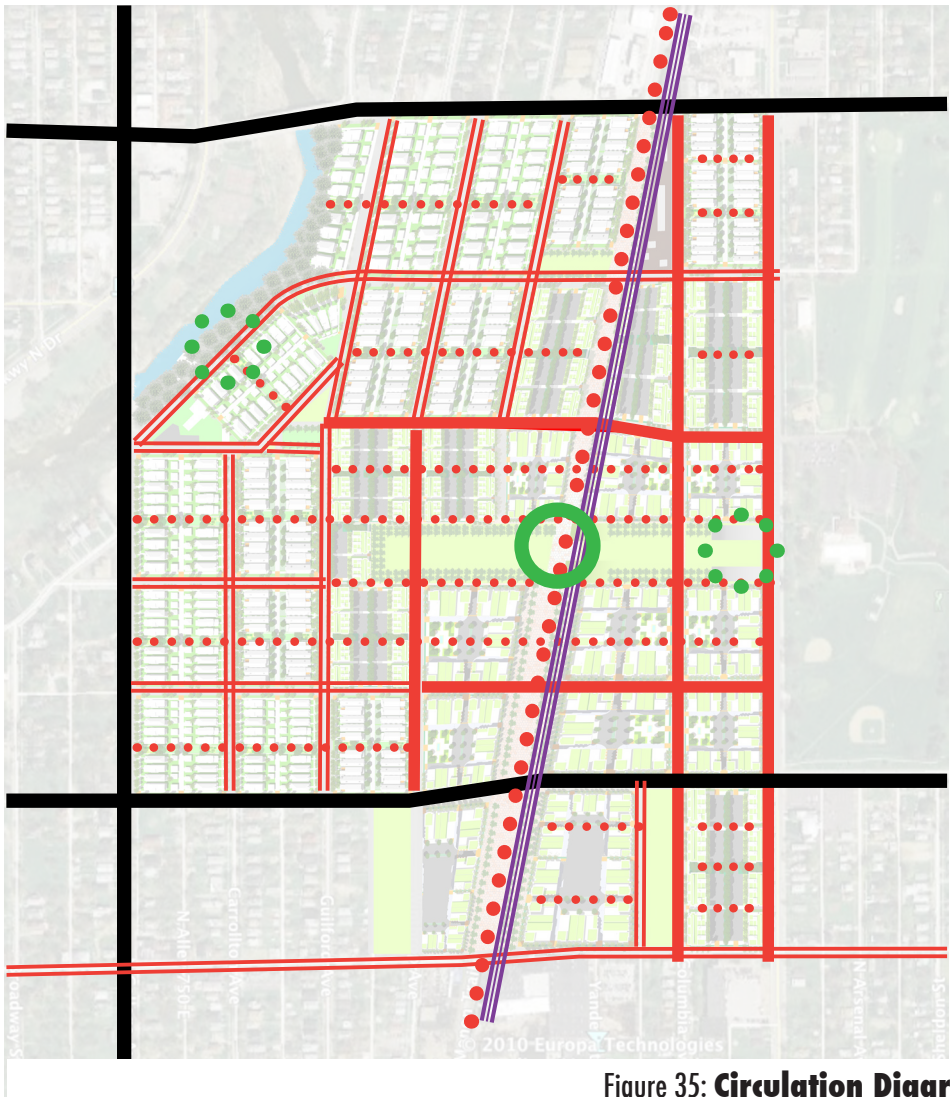


Figure 35: **Circulation Diagram**

- 1** Grid Pattern
- 2** Multi-Modal Transportation
- 3** Secondary Connections



## **Multi Modal Circulation**

Multi modal circulation will primarily deal with the circulation of pedestrians, bicycle, and auto traffic. This has been achieved by well-designed streetscapes including concepts of narrow streets, bike lanes, and wide sidewalks. Another circulation concept is a loop system that allows residents to complete their errands and daily activities in a loop. The looping concept is enhanced by one primary pedestrian/bicycle loop that connects the major open spaces, natural features, and land uses in a nearly one-mile loop. The “Community Loop” has common materials, vegetation, and other streetscape elements.

## **Streetscape**

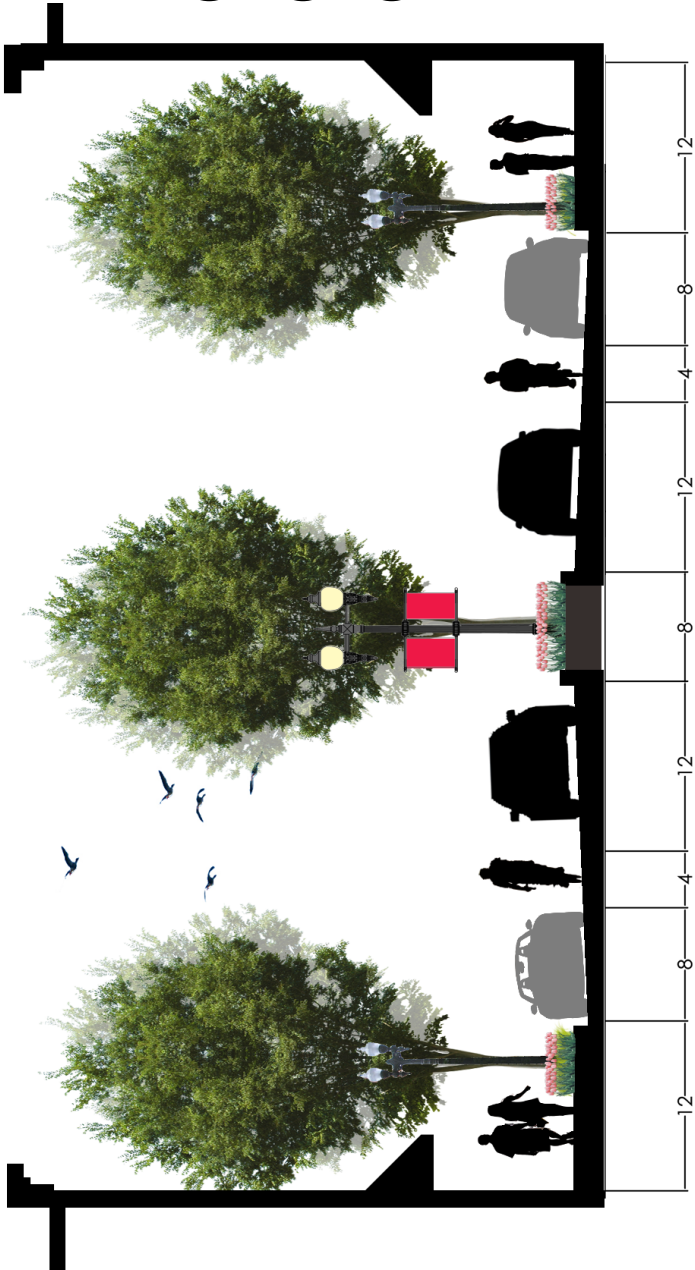
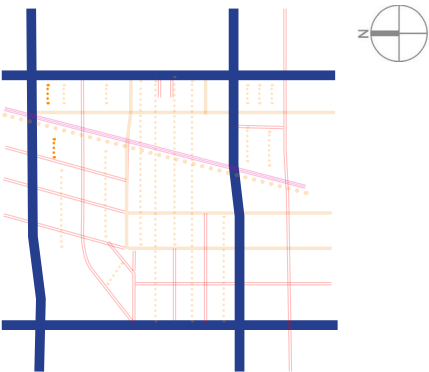
Streetscape can be defined as a group of elements that will unify the developments circulation. The streetscape will encourage vibrant street life, sense of scale, and sense of place. Streets will have street trees, wide sidewalks, benches, planters and containers, similar materials including brick, unit-pavers, and concrete, similar signage and way finding elements.

## **Circulation Elements**

- A**    **On Street Parking**
- B**    **Bike Lanes**
- C**    **Street Lights**
- D**    **Signage/Branding**
- E**    **Wide Sidewalks**
- F**    **Annual Planters**
- G**    **Street Trees**



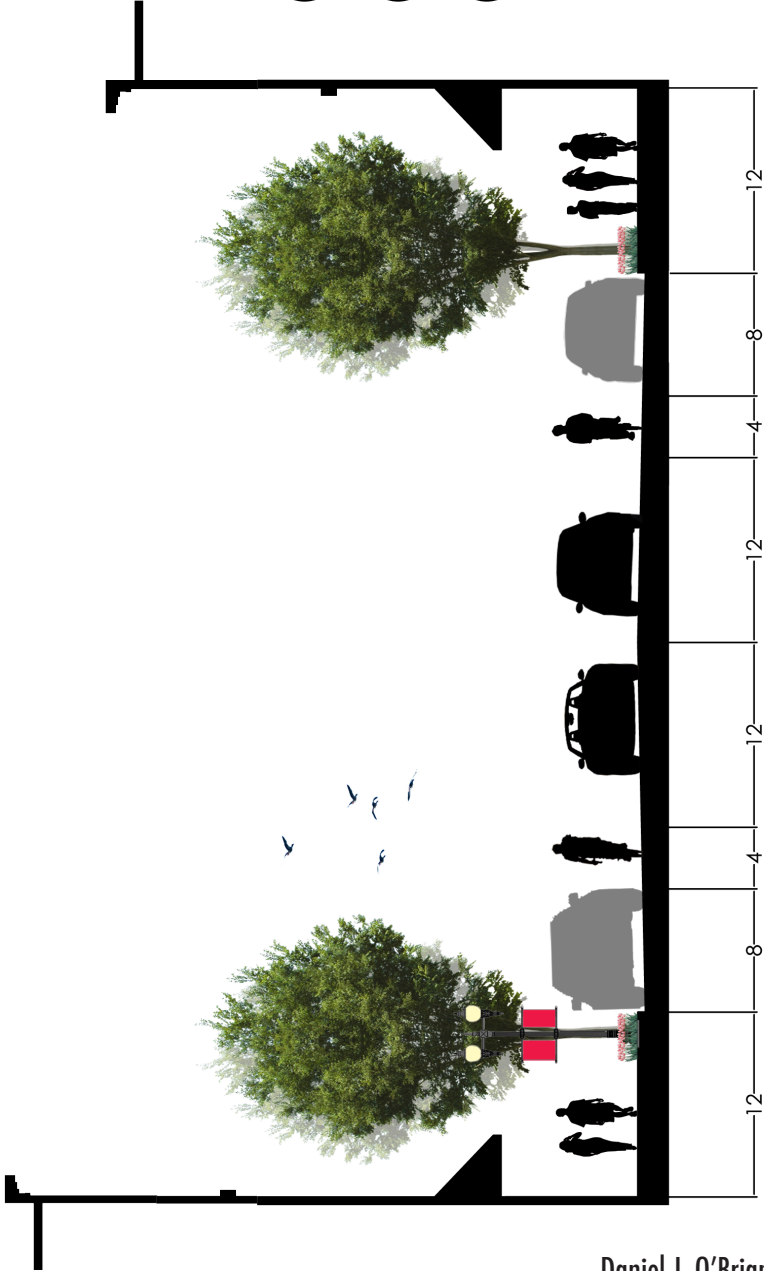
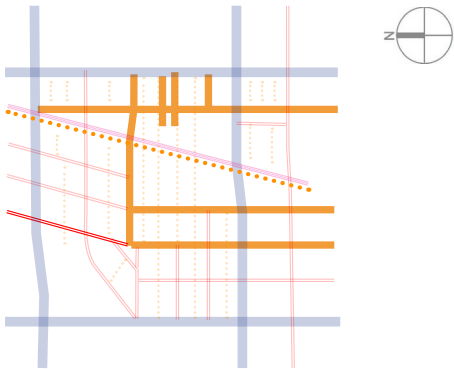
Arterial Streets



- 1 Center Median
- 2 Wide Sidewalks
- 3 On Street Parking

Figure 36: Arterial Streets

**Interior Streets**



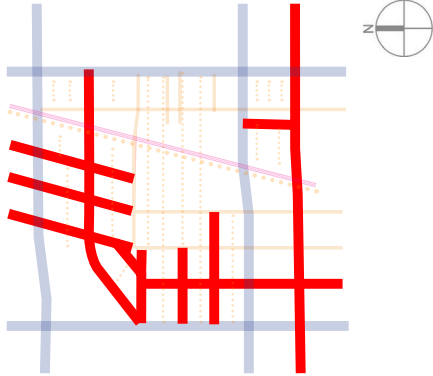
**1** Bike Lane

**2** Wide Sidewalks

**3** On Street Parking

Figure 37: Interior Streets

Residential Streets



- 1 Bike Lane
- 2 Wide Sidewalks
- 3 Street Side Rain Gardens

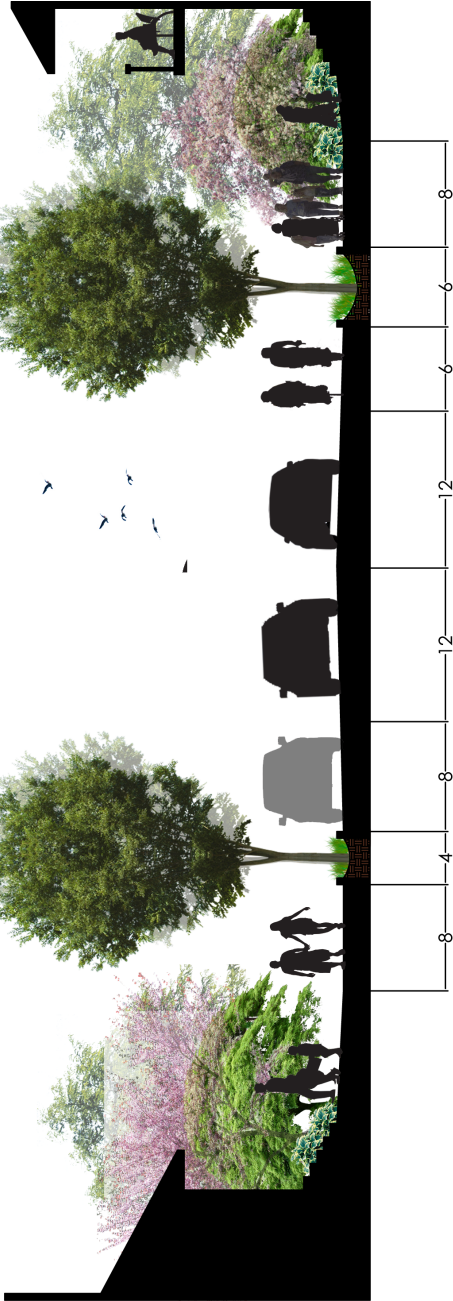
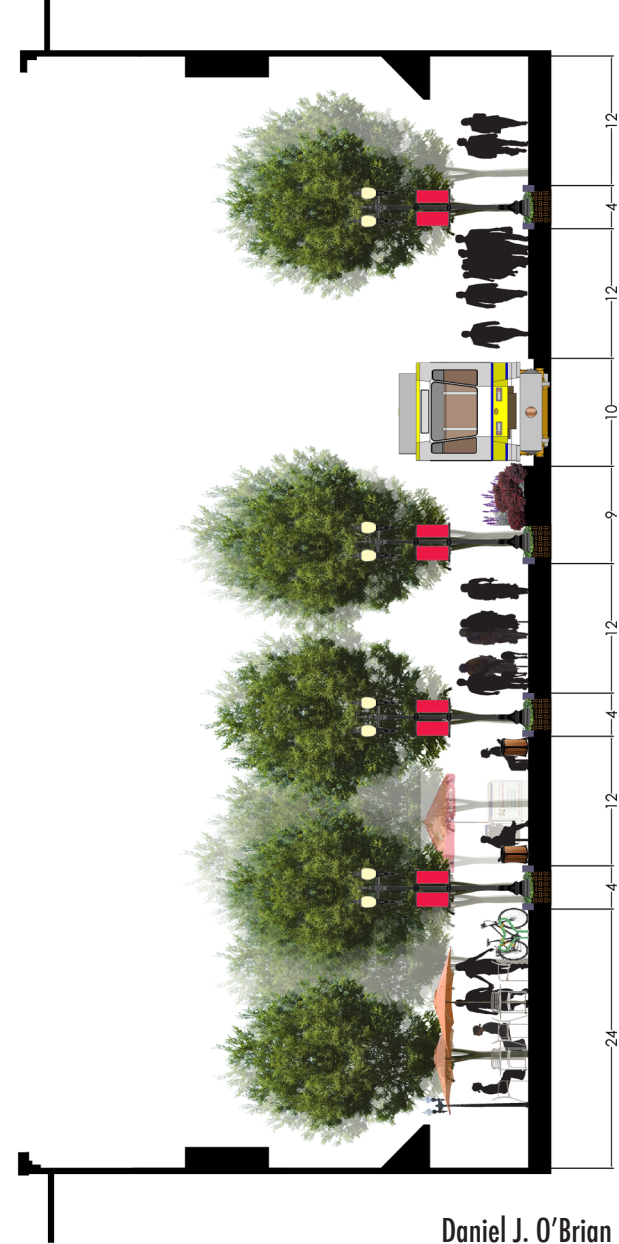
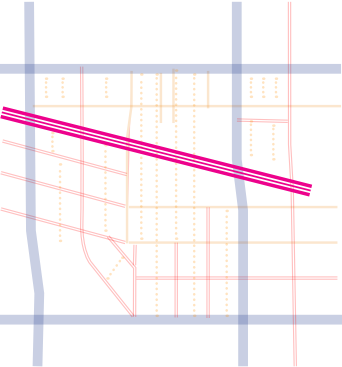


Figure 38: Residential Streets



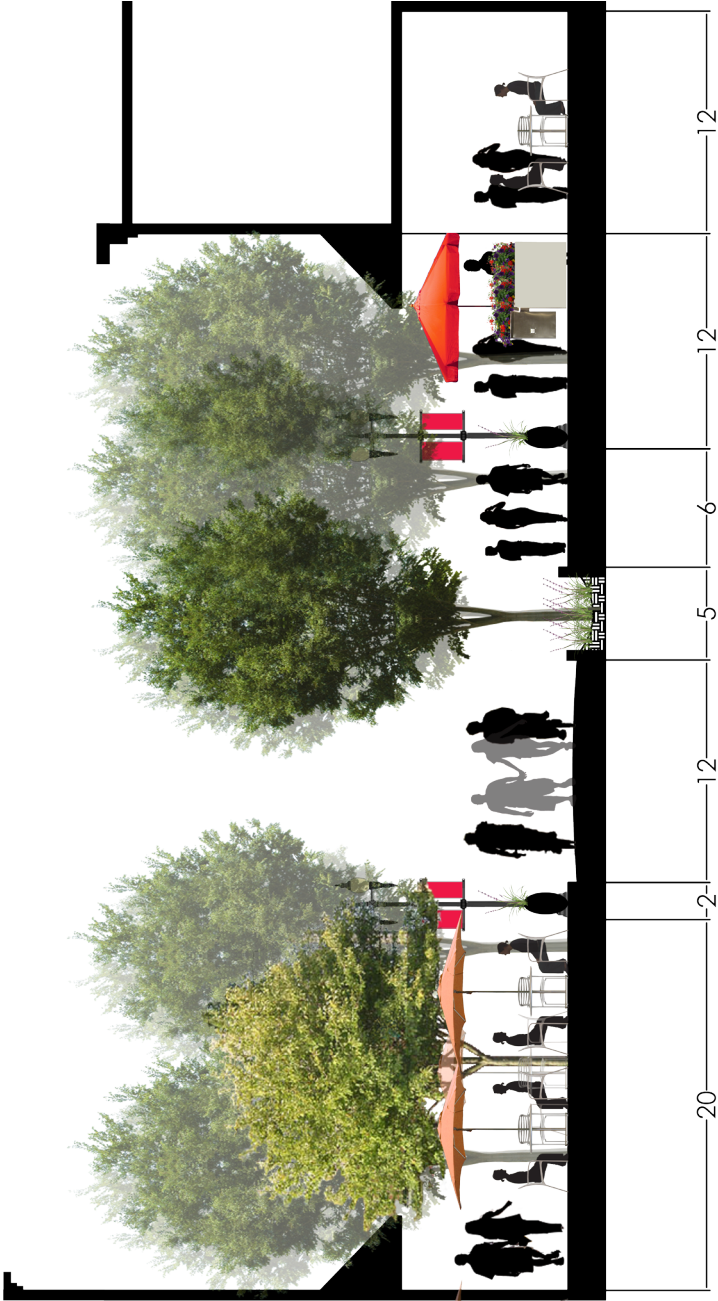
# Pedestrian Promenade and Commuter Rail



- 1 Commuter Rail
- 2 Monon Trail
- 3 Passive Space

Figure 39: Pedestrian Promenade and Commuter Rail

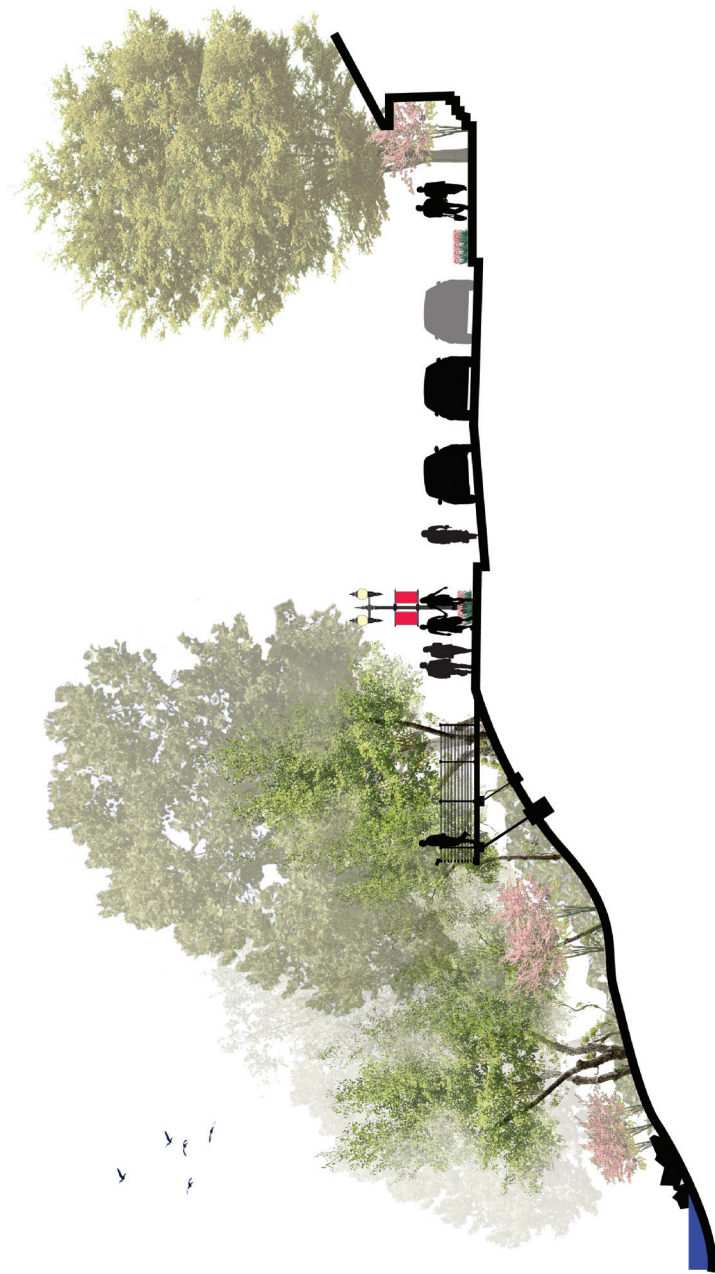
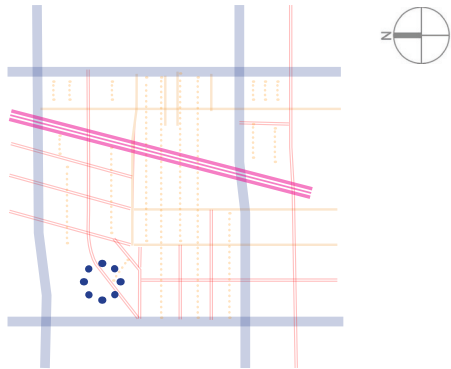
Unique Mixed Use Alley Ways



- 1 Outdoor Cafe Space
- 2 Rain Garden
- 3 Ample Canopy

Figure 40: Unique Alley Ways

# Fall Creek Overlook



- 1 Observation Deck
- 2 Fall Creek
- 3 Wide Sidewalk

Figure 41: Fall Creek Overlook

# Transit Hub



Figure 42: **Transit Hub Plan**



- 1

Centrally Located
- 2

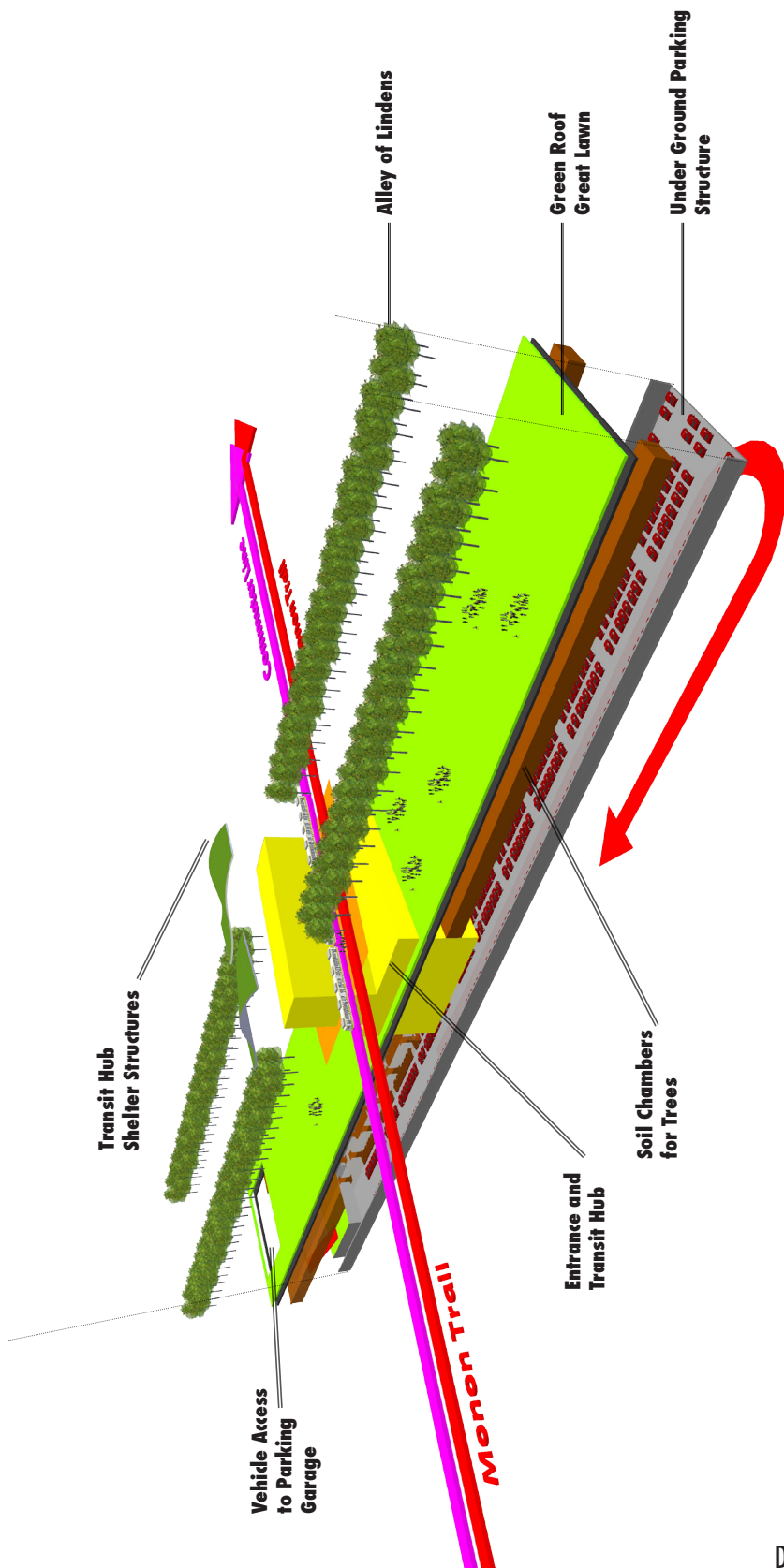
Sculptural Hub Shelter
- 3

Great Lawn
- 4

Under Ground Parking

## Transit Hub

The Transit Hub is the central node of the TOD. It is the initial revitalizing catalyst to the project. People will flow in and out of this Transit Hub. A commuter train and light commuter train will be the primary train used in this hub, and will allow the Martindale-Brightwood community to be connected both regionally and locally.



**Figure 43: Exploded Axon of Transit Hub, Great Lawn and Parking Structure**



# Great Lawn and Transit Hub





Figure 44: **Great Lawn and Transit Hub**

The Great Lawn serves as a large gathering space for the users of the Transit Hub and the residents of the new development. This space will be used as a recreational area, demonstration area and a performance area. The Great Lawn sets up a clear axial view through the transit hub to respect Douglass Park.



MARTINDALE BRIGHTWOOD

**Recreating an Address Through Infill**



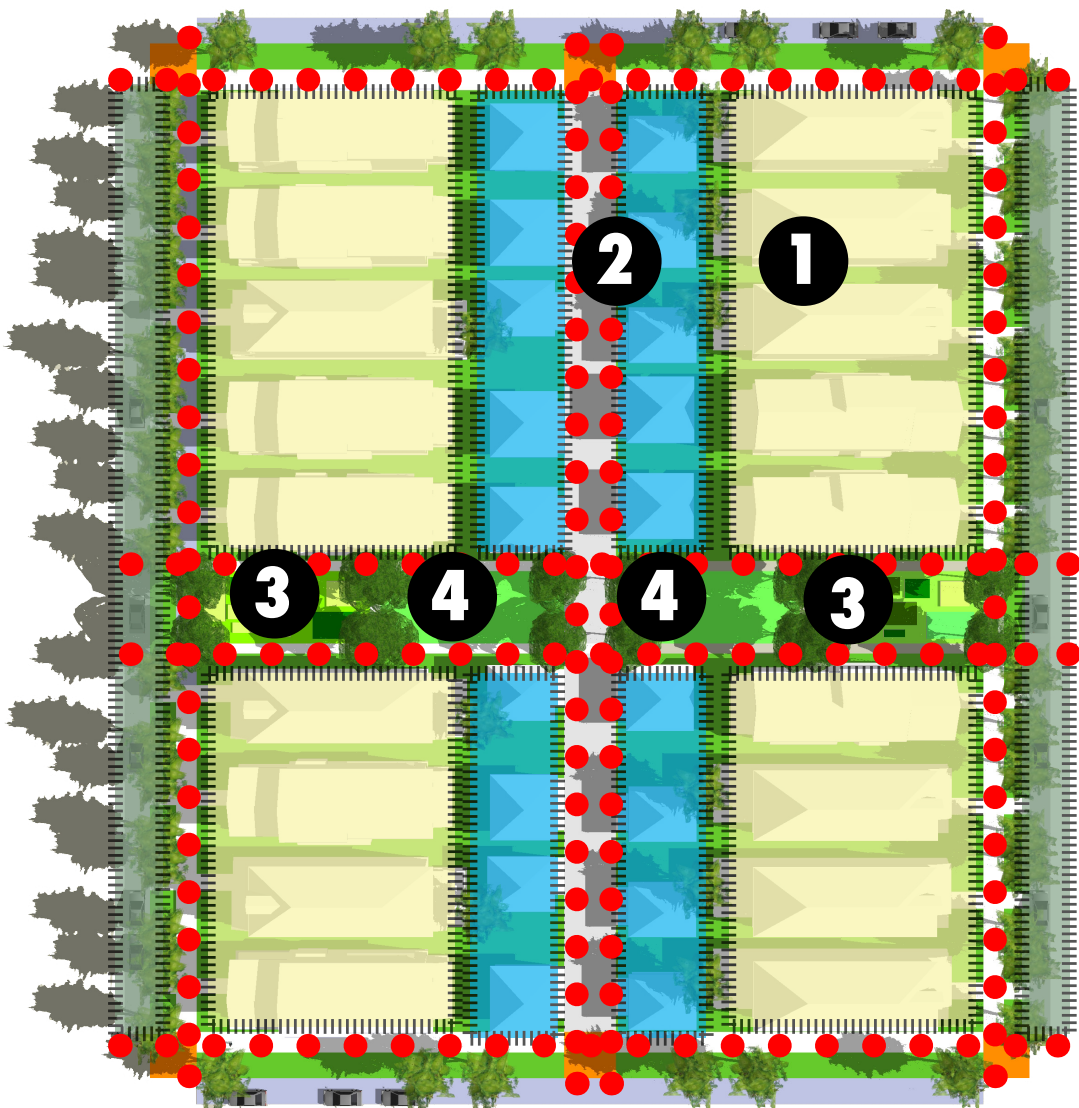


Figure 45: **Single Family Block Plan**

- 1** Single Family/ Duplex
- 2** 18-24 Dwelling Units
- 3** Community Gardens
- 4** Fifteen Minute Walk





**Figure 46: Single Family and Duplex Blocks Axon**

The Duplex/Single family Infill (DSI) will be the least dense form of infill and located within a 10-15 minute walk of the transit hub. These areas will be twice as dense as the original block. DSI will feature a small front and rear yard and detached garages accessed from the rear alley. If desired these rear detached garages can be used as auxiliary dwelling units. Recreational facilities, open space, parking, and local services and amenities will be located in the supporting context.

# Single Family and Duplex



# Community Garden Infill

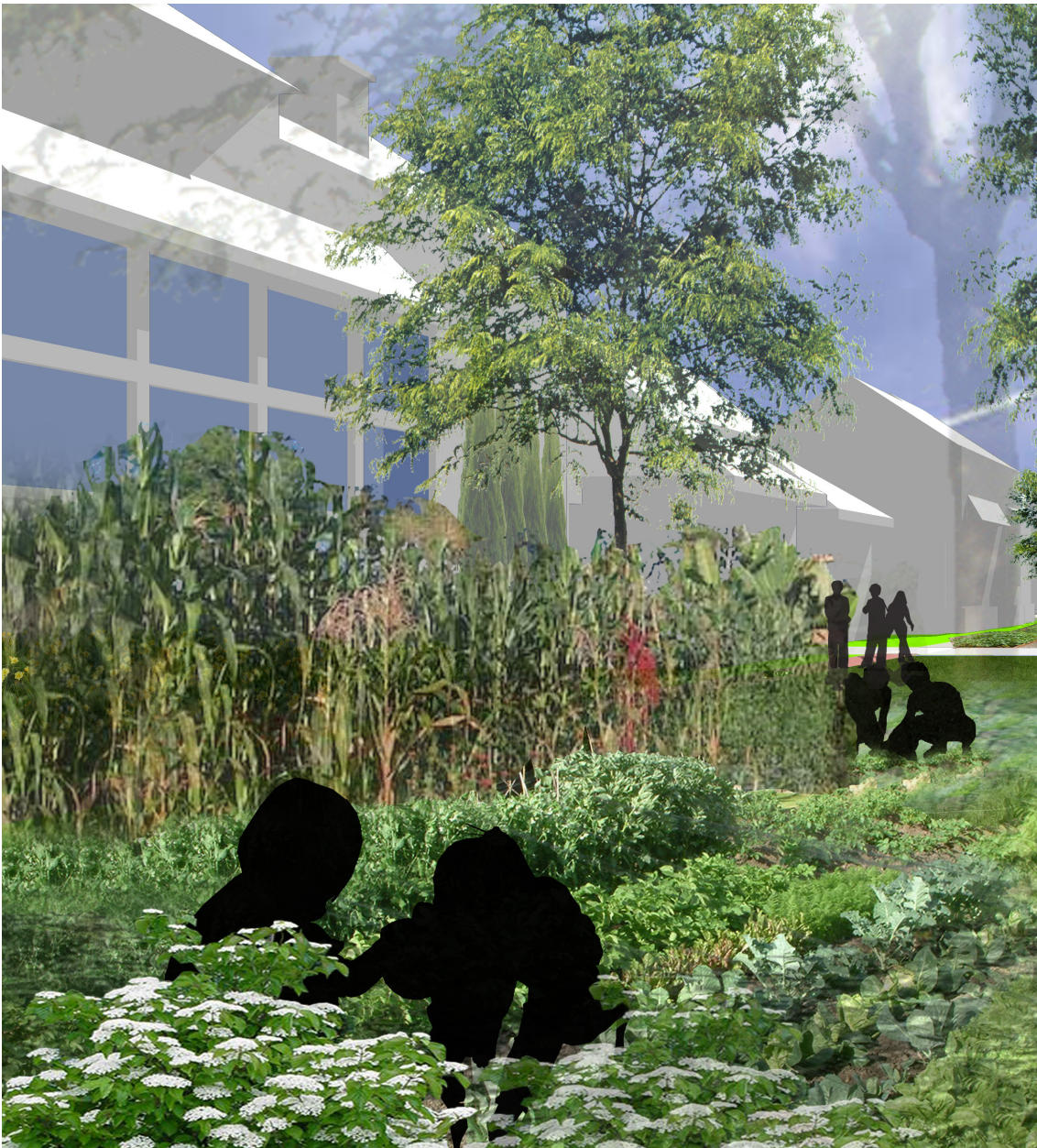




Figure 47: **Community Garden Infill**

The Garden Infill allows the residents an opportunity to grown there own food locally. This gives the residents of the blocks a sense of ownership and pride their neighborhood. These gardens can be vegetable gardens, flower gardens, or open recreational space.



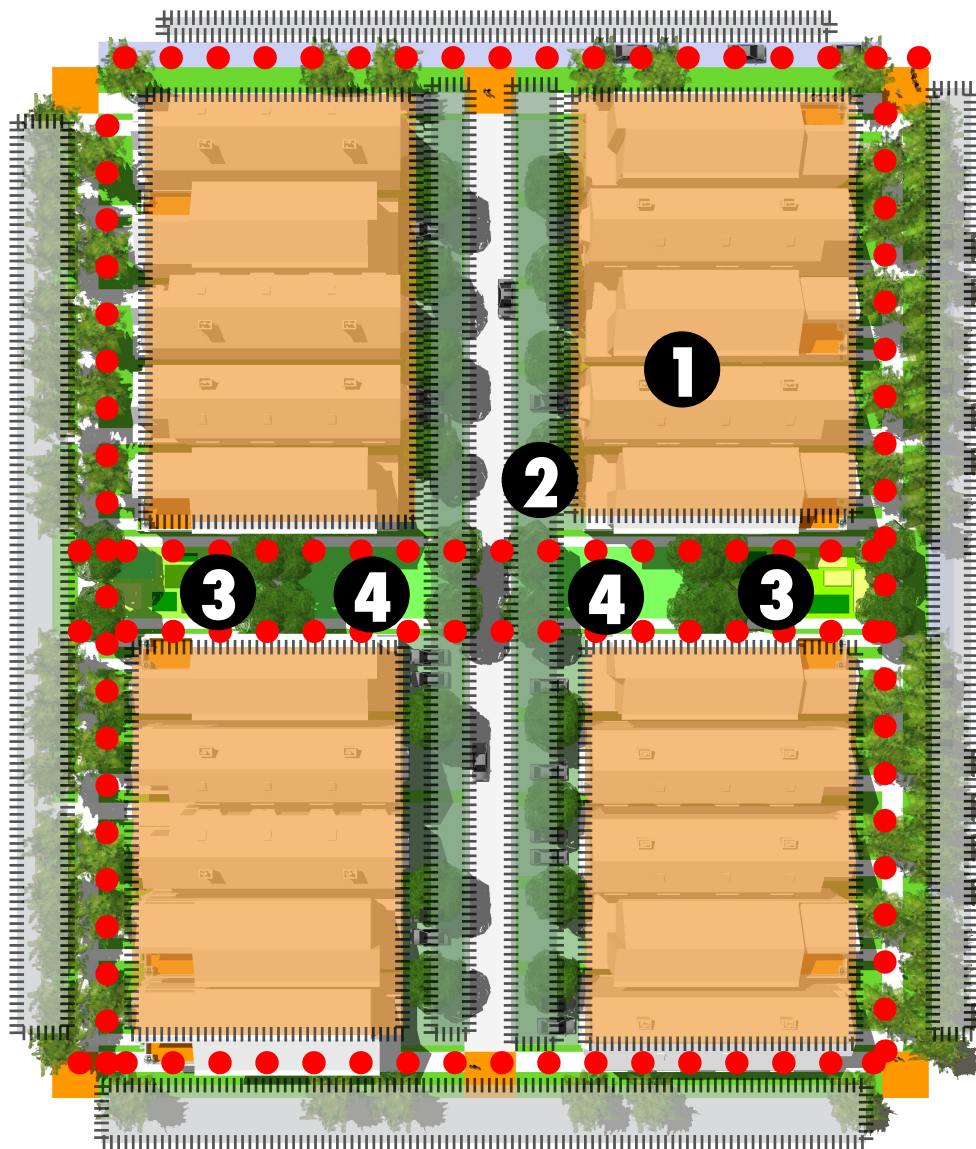


Figure 48: **Town Home Plan**

- 1** Town Home with Tuck Under Parking
- 2** 25-30 Dwelling Units
- 3** Community Gardens
- 4** Twelve to Ten Minute Walk





Figure 49: **Town Home  
Block Axon**

The Town Home infill will be located within a 5-10 minute walk of the transit hub. These areas will have a variety of different building types and will be nearly three times as dense as the initial block layout. The Townhouse buildings will vary from two to three stories with tuck-under parking in the alley. Townhouses will vary from 1 to 3 dwelling units per structure. Recreational facilities, open space, parking, and local services and amenities will be located in the supporting context.

# Town Home Block



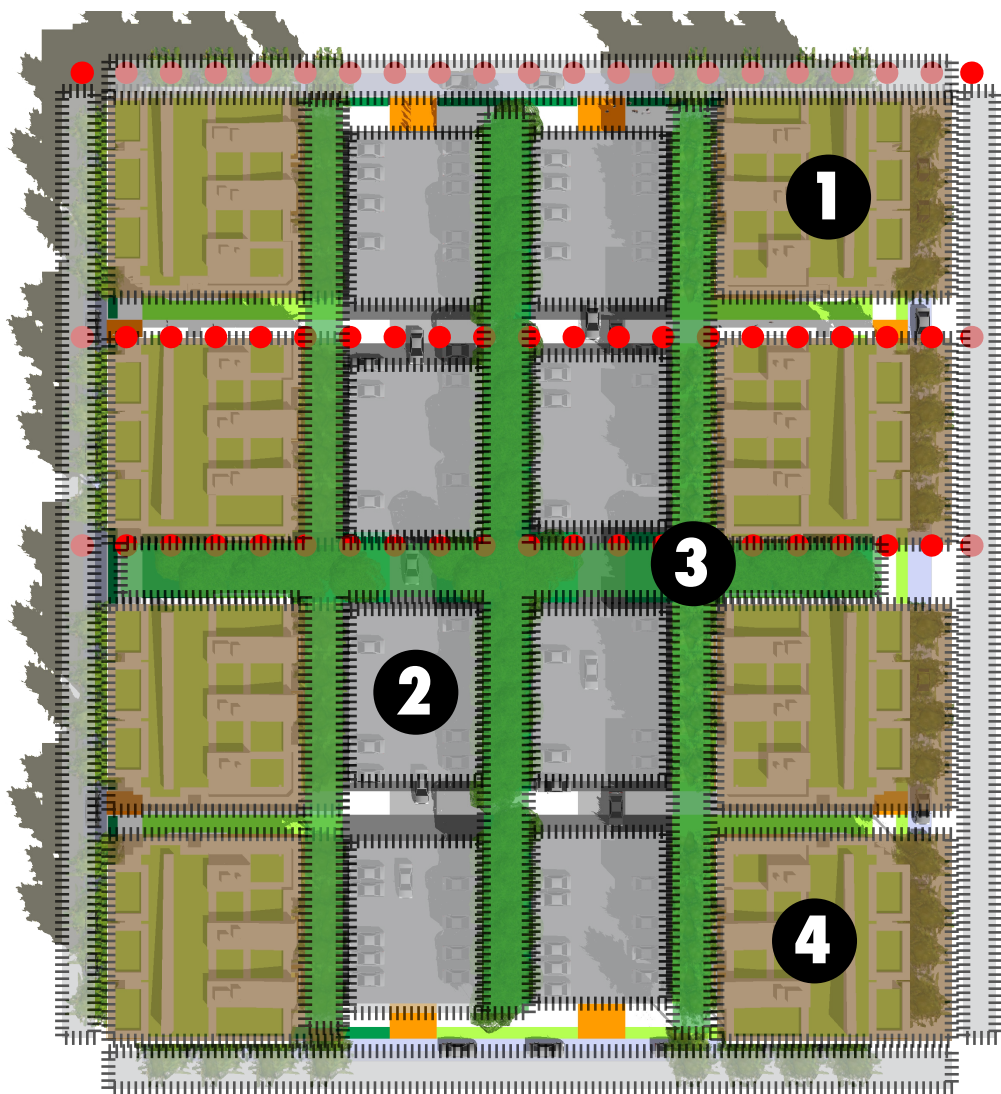


Figure 50 **Apartment Block Plan**

- 1** 4/5 Story Apartment Structures
- 2** 84 100 Dwelling Units
- 3** Rain Gardens/ Bio-Swale / Habitat
- 4** Seven to Five Minute Walk





**Figure 51: Apartment Block Axon**

The apartment infill will be located closest to the transit hub. These areas will have a variety of different building types, which will include 3 story corridor type buildings. Recreational facilities, open space, parking, and local services and amenities will be located in the supporting context.

# Apartment Block



# Apartment Block Bioswale and Wildlife Corridor

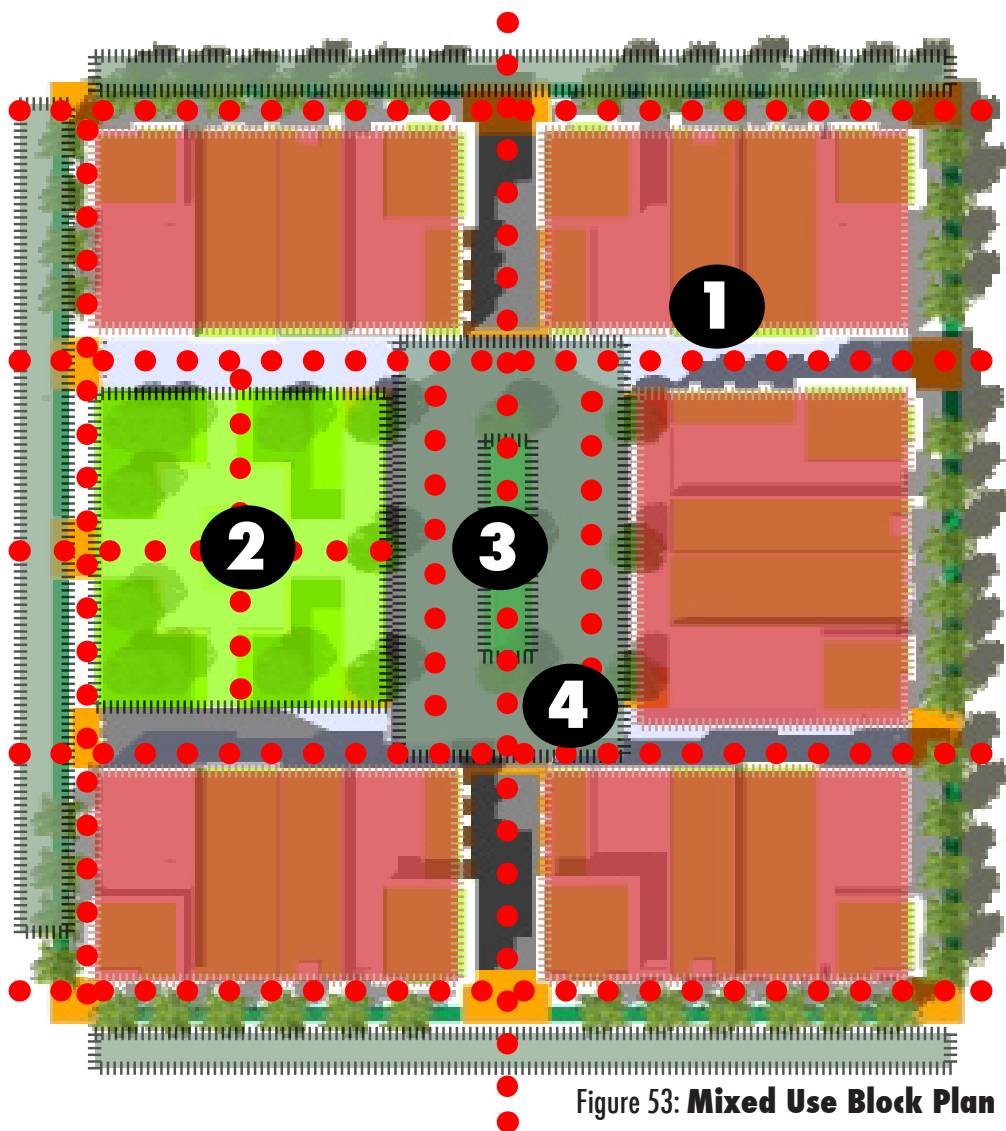




Figure 52: **Apartment Block Bioswale and Wildlife Corridor**

The Bioswale and Rain Gardens of the Apartment Blocks will collect and treat 100% of the stormwater on the block. These combinations of Bioswales and Rain Gardens will provide wildlife corridors and reduce the urban heat island effect.





- 1** Mixed Use Structures
- 2** 35-50 Dwelling Units
- 3** Bio-Swale
- 4** 5 to 3 Minute Walk





Figure 54: **Mixed Use Block Axon**

The Mixed Use Urban village primary use is to meet the needs of the people of Martindale-Brightwood. Currently the local amenities and services such as grocery store, laundry service, and doctor's offices are dispersed randomly within a 1.5-mile radius from the project site. The proximity of these local services and amenities reduce the walkability of the area. The new Mixed Use Village will condense these services into a compact dense area that will increase the walkability of the area. The mixed-use buildings will vary from three to four stories. Retail and commercial uses will be located in the first floor, office or residential apartment uses on the second floor, and residential studio/single bedroom apartment uses in the upper third to fourth stories.

# Mixed Use Blocks



# Mixed Use Block Urban Park





Figure 55: **Mixed Use Urban Park**

These Urban Parks will create a unique sense of place within the Mixed Use Blocks. This example is more passive style of park. It features a water feature and plenty of seating. It also creates an inviting cooling microclimate. Other styles of park will include farmers markets, art galleries, storm water parks, and performance areas.



MARTINDALE BRIGHTWOOD

**Details**

# Rain Garden Detail

Rain Gardens allow Stormwater to be infiltrated on site and relieve the stress on Combined Sewer Overflows. With proper construction, vegetation, and maintenance Rain Gardens are a very aesthetically pleasing and functional element in the urban environment. Rain Gardens are used on the streets and parking lots to collect water from impermeable surfaces.

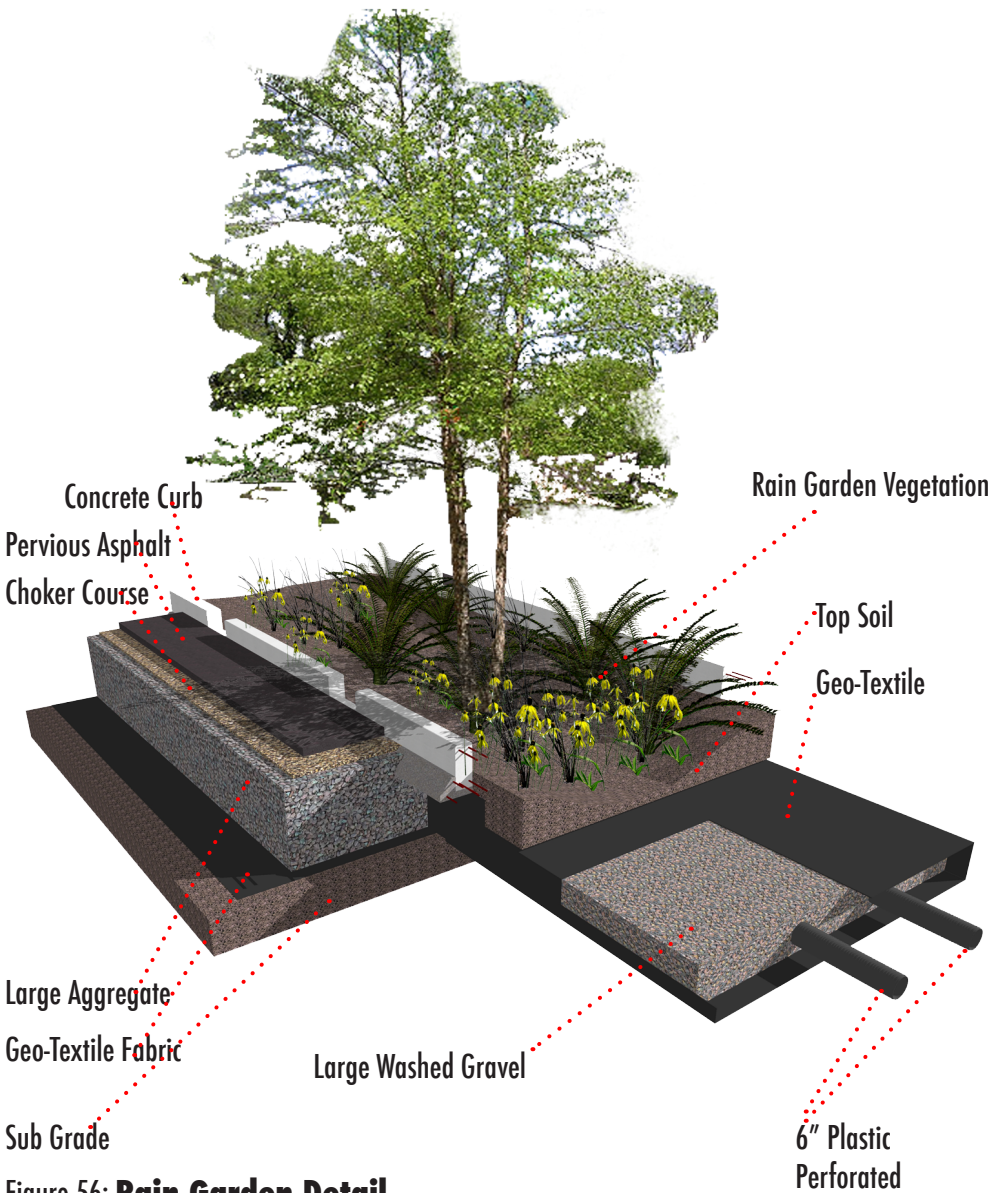


Figure 56: Rain Garden Detail



# Automatic Retractable Bollard

Automatic Retractable Ballard System allows alleys and pedestrian promenades from automobile traffic and safe for pedestrians. The retractable feature of the bollard systems allows for emergency and service vehicles access quickly.

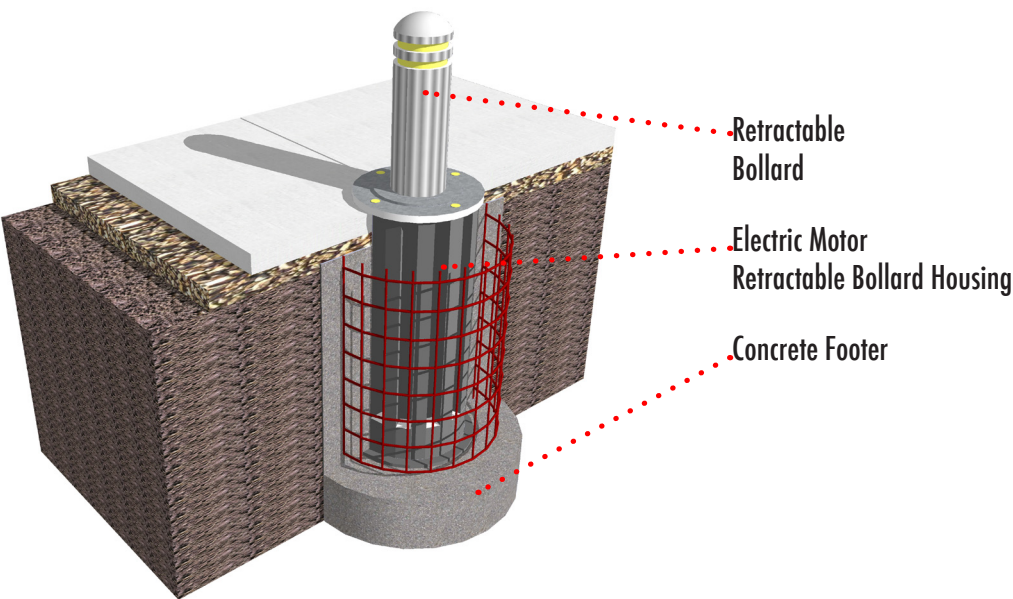


Figure 57: Retractable Bollard Detail

# Green Roof Tray System

The Green Roof Tray System creates an instantly full green roof. Green Roofs are mainly implemented on the flat roofs of the Mixed Use Buildings. Green Roofs reduce the Urban Heat Island Effect, reduce energy consumption, and provide habitat for species of birds and insects.

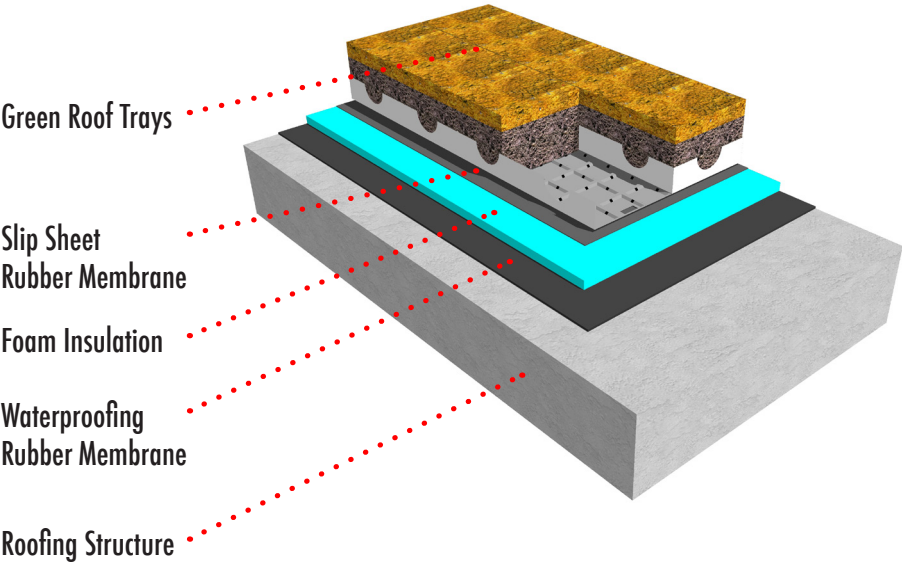


Figure 58: **Green Roof Tray System**



# Grass-Crete

Grass Crete is a innovative material that provides permeable paving through poured concrete and modular voids. When the voids are filled with proper topsoil will establish grass. The concrete is poured around plastic forms and reinforced with rebar. Grass Crete will be used in the alleys and drive ways of the residential blocks.

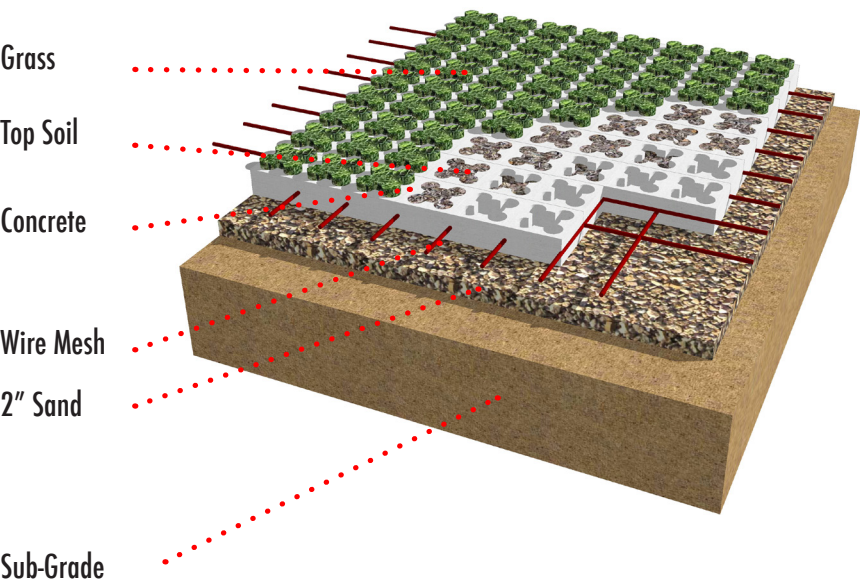


Figure 59: **Retractable Bollard Detail**

# Permeable Pavers and Pervious Concrete

Permeable Pavers and Pervious Concrete allow stormwater to be absorbed on site. Many Cities struggle with the overwhelming amount of impermeable surfaces. Permeable Pavers and Pervious Concrete reduce impermeable surfaces and allow a Developer to increase the amount of impermeable surfaces in the form of buildings and amenities for people and not roads, side walks, and parking lots.

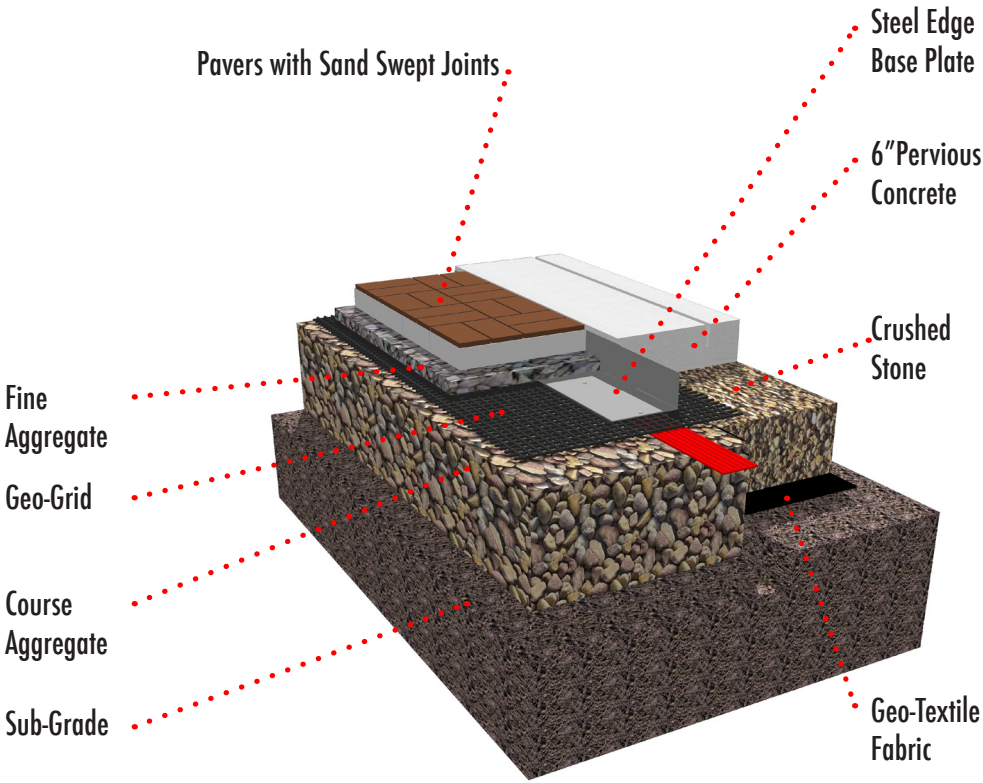


Figure 60: **Permeable Paver Edge Detail**

## Conclusion

Martindale Brightwood's Transit Oriented Development is a very aggressive attempt to employ Transit Oriented Development principles. It will be balanced and constant, while being dynamic, vibrant, and ever changing. This community will need to develop common values and principles. These will be built on the principals of reasonable organization to support smart growth and expansion while being compact and dense. The design allows commercial, retail, jobs, housing and civic uses to be accessible through walking, bicycling, commuter rail, and automobile. By intense streetscape design, pedestrian friendly streets promote connections to local amenities and instill a sense of safety in their users. Housing is diverse in types of houses, densities, and affordability. To soften the harsh urban landscape, the infill development will be ornamented with ample common, public, and natural park space. The building facades are focused and oriented to public spaces and neighborhood activities. Infill is encouraged along transit corridors, and within existing neighborhoods. This project will serve to stitch back together the open void in the urban fabric of Martindale Brightwood formed by abandoned rail and industrial infrastructures.









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